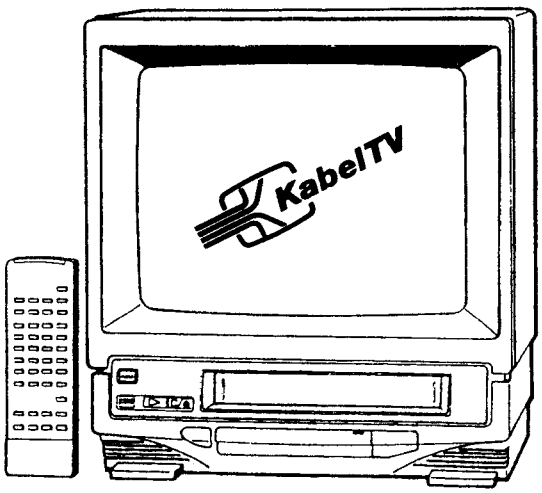
ORION VHS
PAL

COLOR TELEVISION/
VIDEO CASSETTE RECORDER

COMBI 3690



Bestell-Nr.:

4211

Bei technischen Änderungen können Ergänzungsbl[illegible] angefordert werden.

Specifications are subject to change without notice.

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SPECIFICATIONS

TV SECTION

PICTURE SIZE	14 inch
SYSTEM	PAL/SECAM
FREQUENCY RANGE: VHF(L)	2-4, X-Z ch
VHF(H)	S1-S10, 5-12, S11-S20 ch
UHF	21-69 ch
MAXIMUM SENSITIVITY: VHF	20 dB
UHF	25 dB
INTERMEDIATE FREQUENCY:	
Picture IF carrier Frequency	38.9 MHz
Color Sub Carrier Frequency	34.47 MHz
Sound IF Carrier Frequency	33.4 MHz
SOUND INTERMEDIATE FREQUENCY	5.5 MHz
MAXIMUM OUTPUT POWER	1.3 W
10% THD OUTPUT POWER	1.0 W
SPEAKER	8 ohm
POWER SOURCE	AC 220V

VCR SECTION

SYSTEM	CCIR 625 lines, 50 fields PAL and OST color signal
VIDEO RECORDING SYSTEM	2 rotary heads, helical scanning system Luminance: FM azimuth Color signal: Converted subcarrier phase shift
AUDIO TRACK	1 track
TAPE WIDTH	12.7 mm
TAPE SPEED	23.39 mm/sec.
FF/REW WINDING TIME	Less than 5 minutes (e-180)
HEADS	Video: 2 rotary heads Audio/Control: 1 stationary head
INPUT LEVEL	Video: VIDEO IN 1.0 Vp-p, 75 ohm unbalanced Audio: AUDIO IN -8 dB, 50K ohm unbalanced
WEIGHT	16 Kg
DIMENSIONS	375(W)x385(H)x400(D)mm

IMPORTANT

*USE AN ISOLATION TRANSFORMER WHEN PERFORMING ANY SERVICE ON THIS CHASSIS.

*WHEN REMOVING A PCB OR RELATED COMPONENT, AFTER UNFASTENING OR CHANGING WIRE, BE SURE TO PUT WIRE BACK IN ITS ORIGINAL POSITION.

*INFERIOR SILICON GREASE CAN DAMAGE IC's AND TRANSISTORS.
WHEN REPLACING AN IC's OR TRANSISTORS, USE ONLY SPECIFIED SILICON GREASE (YG6260M).
REMOVE ALL OLD SILICON BEFORE APPLYING NEW SILICON.

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DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF BACK CABINET (See Fig. 1)

a. Remove the 6 screws ① which are used for holding the BACK CABINET.
b. Remove the screw ②.
c. Disconnect the following connector. (CD351 2 pin)
d. Take off antenna cable and remove the BACK CABINET.

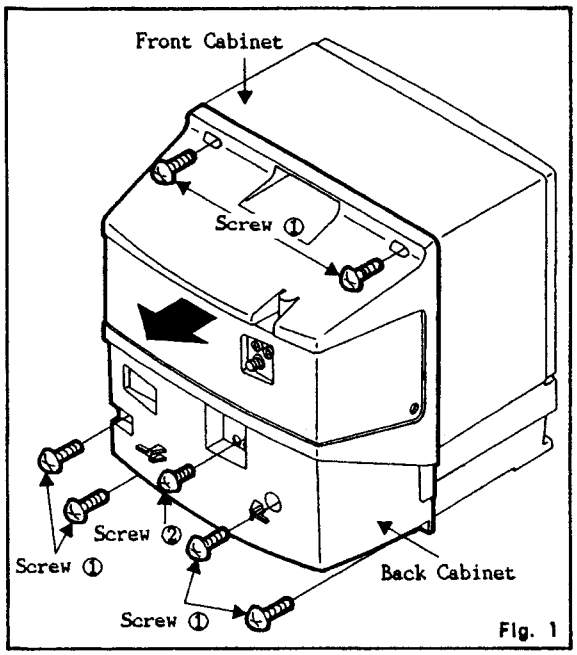


Fig. 1

2. REMOVAL OF TV/VCR BLOCK (See Fig. 2)

a. Remove the CRT PCB in the direction of arrow Ⓐ, then unplug the following connector. (CP803 1 pin)
b. Remove the ANODE CAP.

CAUTION; BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE.

c. Remove the 2 screws ① and 2 screws ②.
d. Disconnect the following connectors. (CP7001 2 pin, CP8003 11 pin, CP8006 9 pin, CP8007 7 pin)
e. Slide out the VCR BLOCK in the direction of arrow Ⓑ.
f. Disconnect the following connectors. (CP401 4 pin, CP502 2 pin)
g. Slide out the TV MAIN PCB in the direction of arrow Ⓒ.

The speaker cannot be removed before removing the EARPHONE PCB(PCB004).

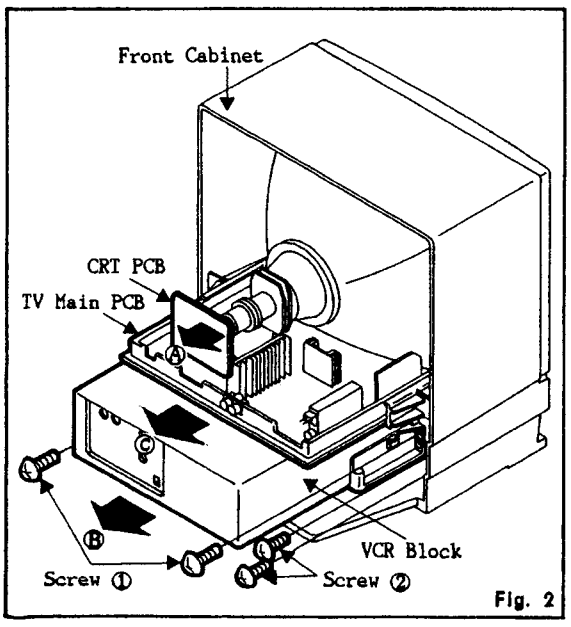


Fig. 2

3. REMOVAL OF TOP CABINET AND OPERATION PCB (See Fig. 3)

a. Remove the 2 screws ①.
b. Remove the 2 screws ②.
c. Remove the 2 screws ⑤.
d. Remove the VCR holder(L), (R) and the TOP CABINET in the direction of arrow Ⓐ.
e. Remove the screw ③.
f. Then disconnect the following connectors. (CD8004 9 pin, CD8005 5 pin, CD8008 2 pin)
g. Remove the OPERATION 2 PCB in the direction of arrow Ⓑ.
h. Unlock the 2 supports ④, then remove the OPERATION 1 PCB in the direction of arrow Ⓒ.

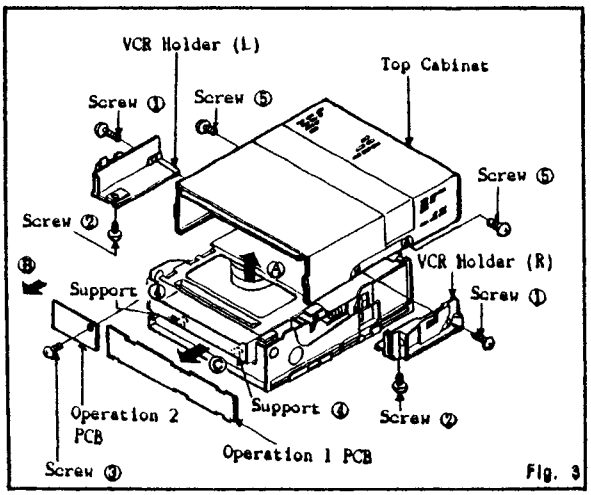


Fig. 3

4. REMOVAL OF BOTTOM CABINET (See Fig. 4)

a. Remove the screw ①.
b. Unlock the 3 supports ②.
c. Unlock the 2 supports ③ and remove the BOTTOM CABINET.

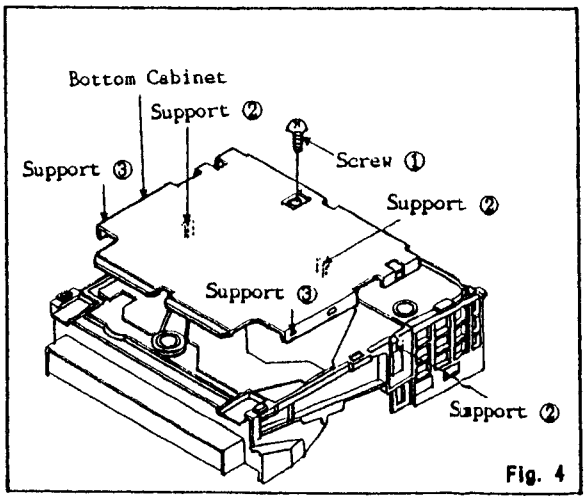


Fig. 4

5. LOCATION OF PRINTED CIRCUIT BOARDS. (See Fig. 5)

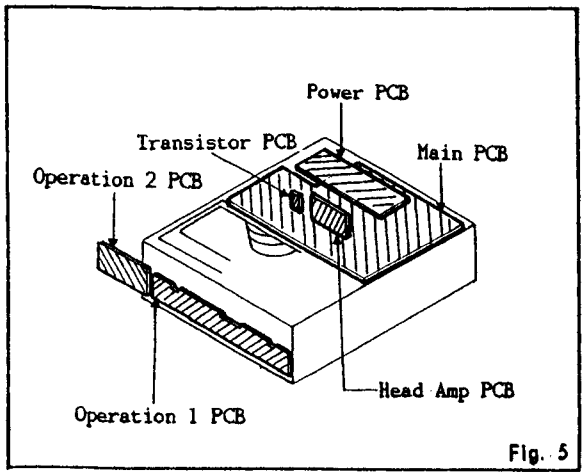


Fig. 5

CAUTION: BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

6. REMOVAL OF MAIN PCB (See Fig. 6)

a. Remove the 2 screws ①.
b. Remove the screw ②.
c. Unlock the 2 supports ③ and remove the MAIN PCB in the direction of the arrow Ⓐ, then disconnect the following connectors. (CP2001 2 pin, CP2002 6 pin, CP2003 9 pin, CP2004 15 pin, CP2501 6 pin, CP2502 8 pin, CP5001 5 pin, and remove the soldering of CD8001 5 pin, CD8002 5 pin.)
d. Unlock the 2 supports ④.
e. Remove the JACK PLATE in the direction of arrow Ⓑ.

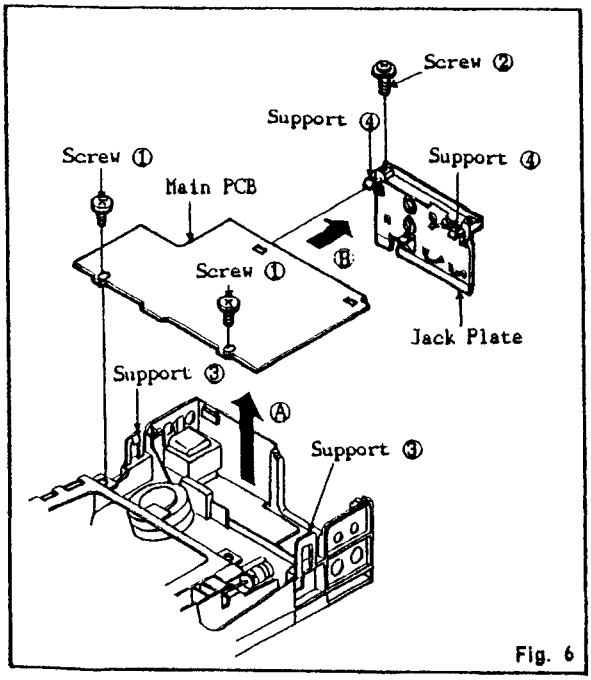


Fig. 6

7. REMOVAL OF POWER PCB (See Fig. 7)

a. Remove the screw ①.
b. Remove the 2 screws ②.
c. Remove the TRANSISTOR PCB. (Refer to item 2-9 of the MECHANICAL ADJUSTMENT.)
d. Remove the POWER PCB in the direction of arrow.

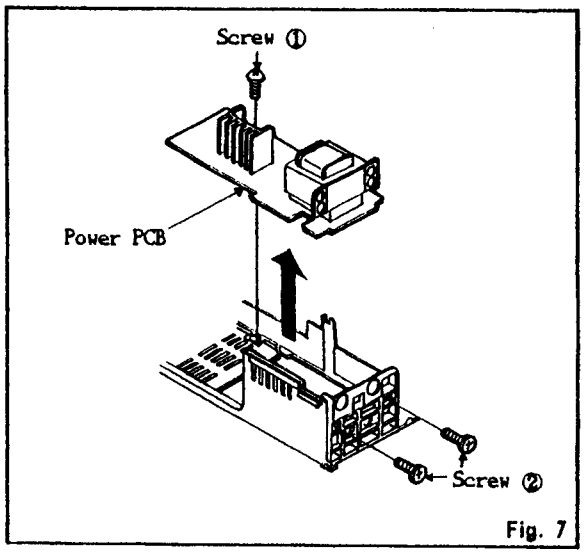


Fig. 7

8. REMOVAL OF FRONT LOADING UNIT AND CHASSIS SECTION (See Fig. 8)

a. Remove the 2 screws ①.
b. Remove the FRONT LOADING BELT.
c. Remove the FRONT LOADING UNIT in the direction of arrow Ⓐ.
d. Remove the 3 screws ②.
e. Remove the 2 supports ③ and remove the CHASSIS SECTION in the direction of arrow Ⓑ.

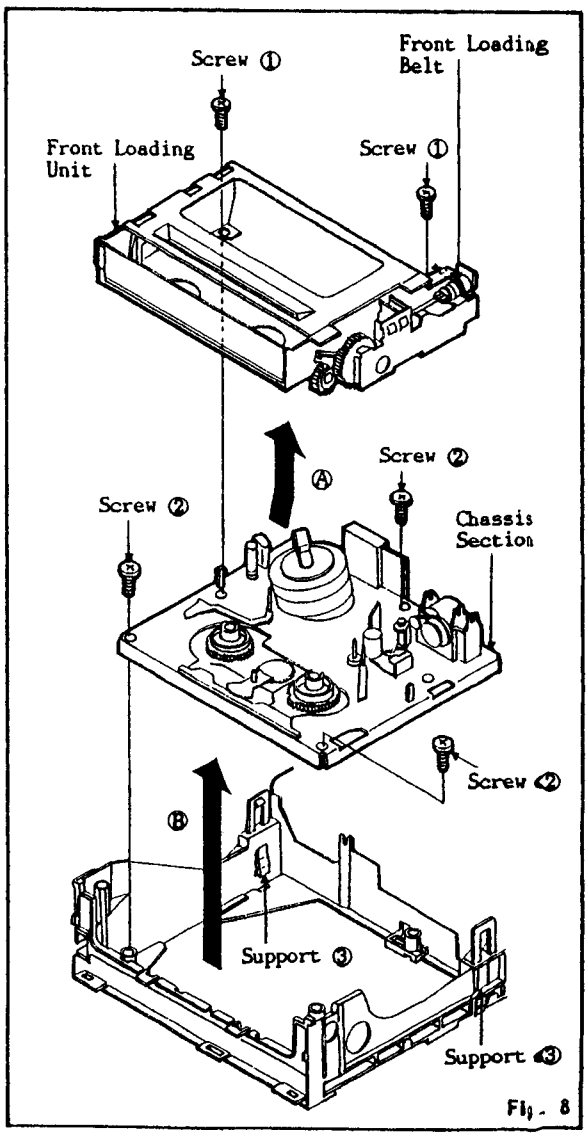


Fig. 8

VCR SECTION

KEY TO ABBREVIATIONS

A	AC	:Alternating Current
	A/C	:Audio/Control
	ACC	:Automatic Color Control
	AE	:Audio Erase
	AFC	:Automatic Frequency Control
	AFT	:Automatic Fine Tuning
	AFT DEF	:Automatic Fine Tuning Defeat
	AGC	:Automatic Gain Control
	AMP	:Amplifier
	ANT	:Antenna
	APC	:Automatic Phase Control
	ASB	:Assemble Mode
	AT	:All Time
B	BGP	:Burst Gate Pulse
	BOT	:Beginning of Tape
	B.P.F	:Band Pass Filter
	B/W	:Black & White
C	CASE	:Cassette
	CAP	:Capstan
	CARR	:Carrier
	CCD	:Charged Coupled Device
	CH	:Channel
	CLK	:Clock
	CLOCK(SY-SE)	:Clock(Syscon to Servo)
	CONV	:Converter
	CPM	:Capstan Motor
	CTL	:Control
	CYL	:Cylinder
	CYL-M	:Cylinder Motor
	CYL SENS	:Cylinder Sensor
D	DATA(SY-SE)	:Data(Syscon to Servo)
	DC	:Direct Current
	DD UNIT	:Direct Drive Motor Unit
	DET	:Detection, Detector
	DEV	:Deviation
E	EE	:Electric to Electric
	EF	:Emitter Follower
	EOT	:Ending of Tape
	EQ	:Equalizer
	EXT	:External
F	FBC	:Feed Back Clamp
	FE	:Full Erase
	FG	:Frequency Generator
	FL SW	:Front Loading Switch
	FM	:Frequency Modulation
	FSC	:Frequency Sub Carrier
	FWD	:Forward
G	GND	:Ground
H	H.P.F	:High Pass Filter
I	IF	:Intermediate Frequency
	INST	:Insert Mode
	INT	:Interrupt
	INV	:Inverter
L	LED	:Light Emitting Diode
	LIMIT AMP	:Limiter Amplifier
	LM	:Loading Motor
	LOAD	:Loading
	L.P.F	:Low Pass Filter
	LUMI	:Luminance
M	MM	:Monostable Multivibrator
	MOD	:Modulator, Modulation
	MS SW	:Mech State Switch
N	NC	:Non Connection
O	OSC	:Oscillator
	OR EQ	:Or Equivalent
P	PB	:Playback
	PB CTL	:Playback Control
	P.CON	:Power Control
	PD	:Phase Detector
	PG	:Phase Generator
	PWM	:Pulse Width Modulation
	PWM TV	:Pulse Width Modulated Tuning Voltage
R	REC	:Recording
	REC ST	:Recording Start
	REEL BRK	:Reel Brake
	REEL S	:Reel Sensor
	REG	:Regulator, Regulated
	REW	:Rewind
	RF	:Radio Frequency
S	S.CLK	:Serial Clock
	S.COM	:Sensor Common
	S.DATE IN	:Serial Date Input
	S.DATE OUT	:Serial Date Output
	SEG	:Segment
	SER	:Search Mode
	SI	:Serial Input
	SIF	:Sound Intermediate Frequency
	SO	:Serial Output
	SP	:Standard Play
	STB	:Serial Strobe
	SW	:Switch
	SYNC SEP	:Sync Separator, Separation
T	TR	:Transistor
	TRACK VR	:Tracking Variable Resistor
	TRIC PB	:Trick Playback
	TP	:Test Point
U	UNREG	:Unregulated
V	VCO	:Voltage Controlled Oscillator
	VIF	:Video Intermediate Frequency
	VP	:Vertical Pulse, Voltage Display
	VR	:Variable Resistor
	V-SYNC	:Vertical-Synchronization
	VT	:Voltage Tuning
Y	Y/C	:Luminance/Chrominance

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or disuse may cause transformation and aging of rubber parts.

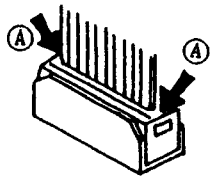
Parts Name \ Time	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Full Erase Head	□	□	□	□	□	Clean those parts in contact with the tape.
Audio Control Head	□	□	□	□	□	
Loading Belt		□		○		Clean the rubber, and parts which the rubber touches.
Reel Belt		□		○		
Front Loading Belt		□		○		
Pinch Roller	□	□	□	□	□○	
Capstan DD Unit					○	
Loading Motor					○	
Tension Band					○	
Capstan Shaft	□	□	□	□	□	
Impedance Roller	□	□	□	□	□	Replace when rolling becomes abnormal.
Tape Running Guide Post	□	□	□	□	□	
Cylinder Unit	□	□○	□	□○	□○	※

○ : Replace
□ : Clean

※ Clean the upper drum (especially the video heads) in the direction or drum rotation using a thick, textured cloth with a high quality methyl alcohol. Avoid wiping vertically as this may cause damage to the video heads.

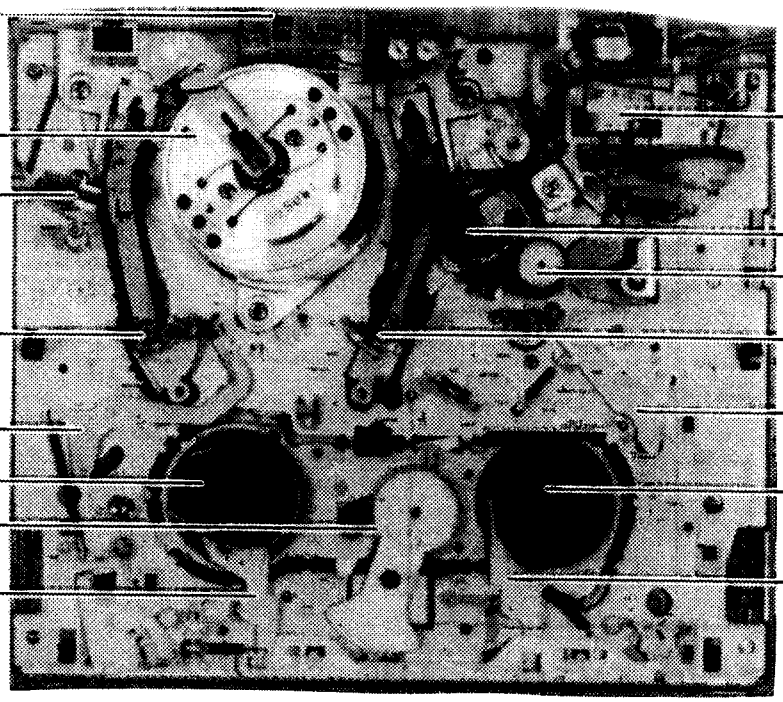
HOW TO REMOVE AND INSTALL RIBBON WIRE IN CASE OF DISCONNECTION.

1. To remove the wire, simultaneously press both parts indicated by arrow Ⓐ
2. To install the wire, do not press the parts indicated by arrow Ⓐ , but insert the wire into the connector.

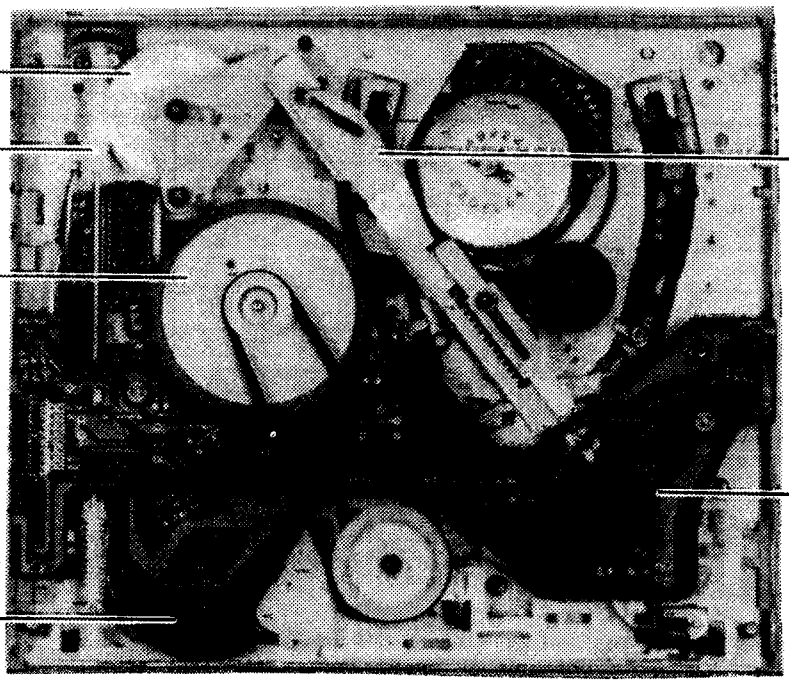


DECK PARTS LOCATION

(TOP VIEW)



(BOTTOM VIEW)



MECHANICAL ADJUSTMENTS

1. BEFORE MAKING MECHANICAL ADJUSTMENTS

CAUTION

Inferior silicon grease can damage IC's and transistors.
When replacing IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

PRECAUTION

Remove the following items before adjusting the deck and starting work.

1. Remove 7 screws and the BACK CABINET.
2. Disconnect the following connectors. (CP7001 2 pin, CP8003 12 pin, CP8006 9 pin, CP8007 7 pin, CP501 2 pin, CP502 2 pin)
3. Remove 2 screws of the OPERATION 2 PCB.
4. Remove 2 screws, then take out the VCR holder (L) and (R) to remove the VCR only.
5. Remove 4 screws, then take out the VCR holder (L) and (R) to remove the TOP CABINET.
6. Remove 1 screw and remove the BOTTOM CABINET. **(Refer to DISASSEMBLY INSTRUCTIONS)**
7. When you want to operate the VCR only, connect the connector CD7001 to AC power source.
8. Remove the STAGE. **(Refer to Item 1-1)**

Read the following NOTED items before starting work.

* Remove the stage when replacing the deck parts.
* Place an object which weighs between 350g and 500g on the Cassette Tape to keep it steady when you want to make the tape run without the stage. (Do not place an object which weighs over 500g.)
* When you activate the deck without the stage, short Q1101(BOT SENSOR). EOT/BOT sensor will not function in this condition. Be sure to return the deck to it's original condition after repairs are completed.

1-1: HOW TO REMOVE AND INSTALL STAGE

REMOVAL **(Refer to Fig. 1)**

1. Remove 2 screws ① from the main PCB.
2. Remove the screw located inside the unit on the top of the JACK PLATE. Disconnect the main PCB by releasing the 2 hooks (1 on each side of the unit).
3. Remove the pulley of loading motor box and the loading motor belt hooked on the stage worm.
4. Remove the screws ② and ③ in the EJECT mode.
5. Push the stage in the direction of the arrow and lift up to remove the stage.

NOTE

When you remove and install the stage, be careful not to touch the guide pin or cylinder head.

INSTALLATION

Install new stage in the reverse steps of REMOVAL.

NOTE

When you re-install the stage, it should be in the EJECT mode.

CONFIRMATION

1. The front loading operation works well when turning on the power and when inserting a cassette tape into the stage.
2. Each function works well when pressing the PLAY, EJECT and REC buttons.

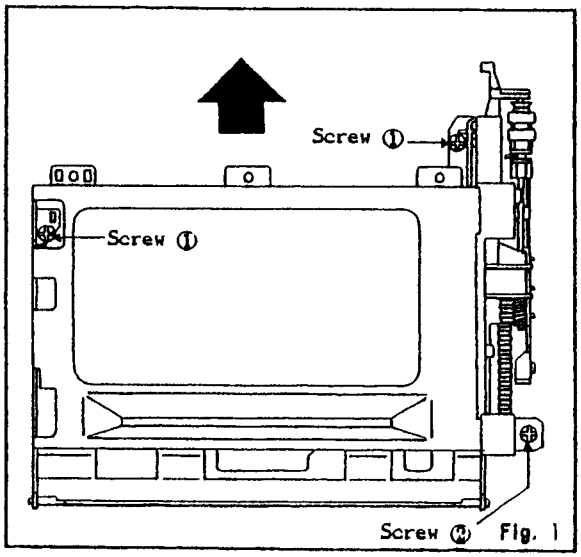


Fig. 1

2. REPLACEMENT OF MAIN PARTS

2-1: REEL DISK

REMOVAL **(Refer to Fig. 2-1)**

(Supply Reel Disk)

1. Remove the actuator sub brake.
2. Remove the SS brake spring, then remove the SS brake arm.
3. Remove the tension band from the main chassis.
4. Remove the polyslider washer ①.
5. Pull the supply reel disk ③ upward and replace it.

(Take-Up Reel Disk)

1. Remove the actuator sub brake.
2. Remove the TS brake spring, then remove the TS brake.
3. Remove the polyslider washer ④.
4. Pull the take-up reel disk ⑤ upward and replace it.

NOTE

The height adjustment washers ② and ⑥ are sometimes attached to the back of the reel disk.

INSTALLATION

(Supply/Take-Up Reel Disk)

1. Clean the reel disk shaft and put in height adjusting washers ② and ⑥.
2. Install new reel disk.
3. Adjust the height of the reel disk. **(Refer to Item 3-5)**
4. Pull out the new supply/take-up reel disk. After oiling (Cosmo Oil Hydro HV100) the reel disk shaft, install the new supply/take-up reel disk again.
5. Install the supply/take-up reel disk in the reverse steps of REMOVAL.

MECHANICAL ADJUSTMENTS

NOTE

1. Be careful not to damage the tension band at the time of removal and installation.
2. Be careful not to scratch the reel disk shaft with the polyslider washer or the tool at the time of removal and installation.
3. After installation, adjust and confirm the tension post position. **(Refer to Item 3-6)**

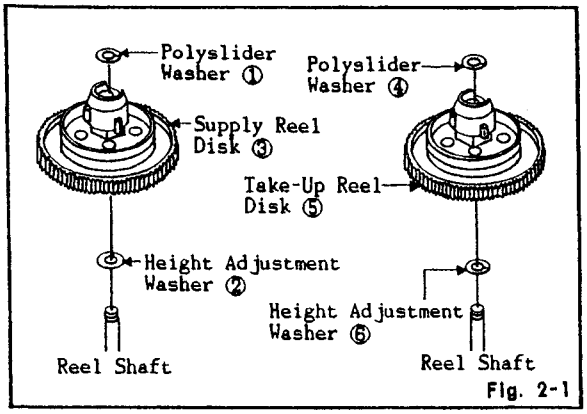


Fig. 2-1

2-2: A/C HEAD

REMOVAL **(Refer to Fig. 2-2)**

Remove the screws ①, ② and ③.

INSTALLATION

Install new A/C head in reverse steps of REMOVAL.

NOTE

Do not touch the heads by any means when replacing the A/C head.

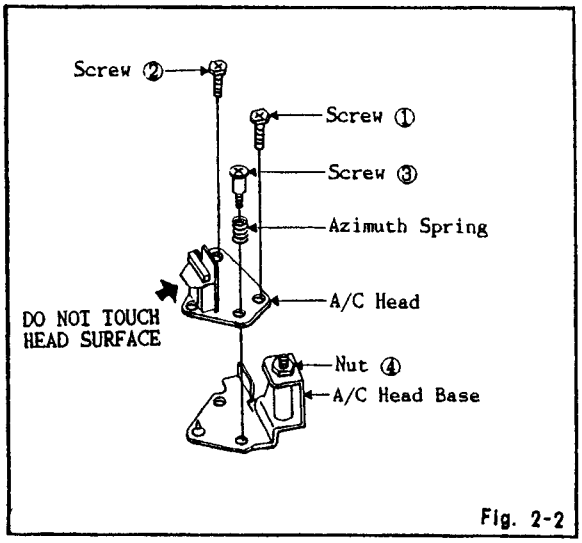


Fig. 2-2

2-3: UPPER DRUM

REMOVAL **(Refer to Fig. 2-3)**

1. Remove the screw ② which holds the earth brush .
2. Desolder the lead wires ① from the upper drum assembly.
3. Be sure to use gloves, avoid the surface of cylinder unit. Hold down the upper drum to prevent it from turning, then remove the screws ④, and remove the upper drum with the upper drum fixing jig **(JG031)**.

INSTALLATION

Install new upper drum in the reverse steps of REMOVAL.

NOTE

1. Do not apply excessive pressure to screwdriver.
2. Before installing, confirm that there are no scratches or dust on the disk, upper drum surface and drum head surface.
3. When setting, take care not to let any dust or dirt go into the clearance between disk and upper drum.
4. Do not touch the surface of the cylinder head.
5. Check the adjustment of tape running. **(Refer to Item 4-6)**
6. After replacement confirm the following adjustments.

a. ELECTRICAL ADJUSTMENTS : ITEM 2-1
b. ELECTRICAL ADJUSTMENTS : ITEM 2-2
c. ELECTRICAL ADJUSTMENTS : ITEM 2-3
d. MECHANICAL ADJUSTMENTS : ITEM 4-3

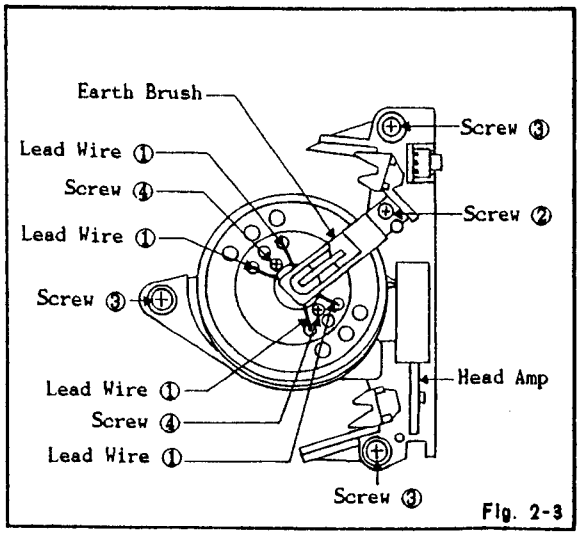


Fig. 2-3

MECHANICAL ADJUSTMENTS

2-4: CYLINDER UNIT

REMOVAL (Refer to Fig. 2-3)

1. Remove the transistor PCB. (Refer to Item 2-9)
2. Disconnect the connector (CP4102, 8 pin) from the head amp PCB.
3. Remove the screws ③, then remove the cylinder unit from the main chassis.
4. Disconnect the connector of the cylinder motor.

INSTALLATION

Install new cylinder unit in reverse steps of REMOVAL.

NOTE

1. Do not touch the surface of the cylinder head.
2. After replacement confirm the following adjustments.

a. ELECTRICAL ADJUSTMENTS : ITEM 2-1
b. ELECTRICAL ADJUSTMENTS : ITEM 2-2
c. ELECTRICAL ADJUSTMENTS : ITEM 2-3
d. MECHANICAL ADJUSTMENTS : ITEM 4-3

2-5: TENSION BAND

REMOVAL (Refer to Fig. 2-4)

1. Remove the actuator sub brake.
2. Remove the SS brake spring, then remove the SS brake arm.
3. Remove the screw ①.
4. Remove the tension band from the tension arm.

INSTALLATION

Install new tension band in reverse steps of REMOVAL.

NOTE

1. Install the tension band without twisting it.
2. Adjust the placement of the tension post. (Refer to Item 3-6)
3. Adjust and confirm the back tension during playback. (Refer to Item 3-7)

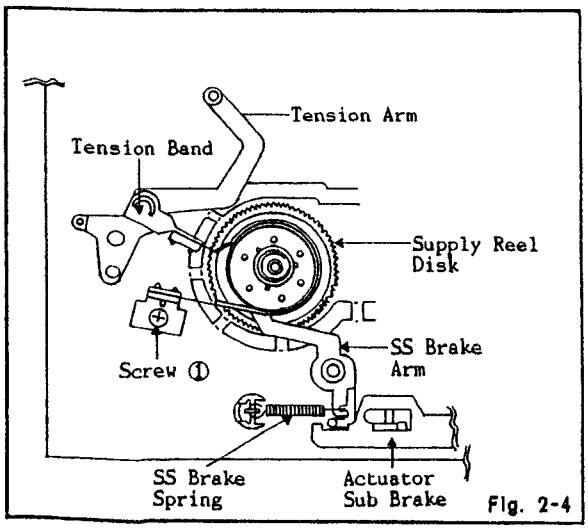


Fig. 2-4

2-6: LOADING MOTOR / LOADING MOTOR BELT

REMOVAL (Refer to Fig. 2-5)

1. Remove the 2 wires soldered to the loading motor.
2. Remove the lead wire in the hook of the loading motor box.
3. Remove the loading motor belt ②.
4. Remove the screw ①, then remove the loading motor box.
5. Remove the loading motor belt ③.
6. Remove the screw ④, then lift the loading motor upward.

INSTALLATION

Install new loading belt in reverse steps of REMOVAL.

NOTE

1. Clean the pulley when replacing loading belt.
2. Replace it while in the EJECT mode.
3. Avoid getting grease on the loading belt.

CHECK AFTER INSTALLATION

1. Check if strange sound is heard in PLAY mode.
2. Check if P2 post and P3 post are fitted to the post stopper.
3. Check if P2 post and P3 post are completely returned in EJECT mode.

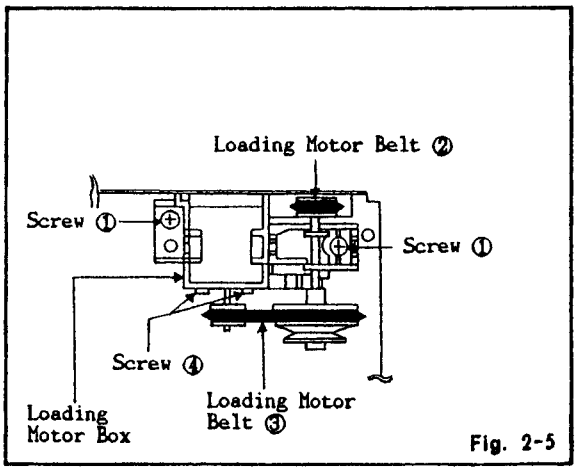


Fig. 2-5

2-7: PINCH ROLLER

REMOVAL (Refer to Fig. 2-6)

1. Remove the pinch roller arm spring.
2. Remove the polyslider washer ①.
3. Remove the pinch roller.

INSTALLATION

Install new pinch roller in reverse steps of REMOVAL.

NOTE

1. Be careful not to bend the pinch roller arm in removal and installation.
2. Do not touch the pinch roller. (Use gloves.)

CHECK AFTER INSTALLATION

Check if the tape is running normally in PLAY mode.

MECHANICAL ADJUSTMENTS

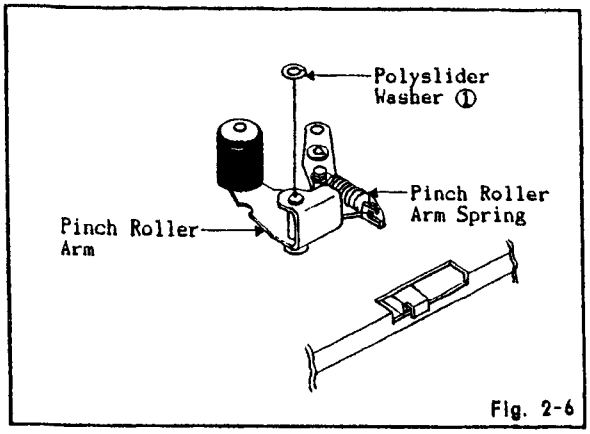


Fig. 2-6

2-8: CAPSTAN DD UNIT

REMOVAL

1. Remove the reel belt.
2. Remove the solder "A" positions, remove the screws ① and then remove the deck bottom PCB.
3. Remove the loading motor belt ②.
4. Remove the screw ④, then remove the bracket worm 3.
5. Pull the hook ③ in the direction of arrow, then remove the worm. **(Refer to Fig. 2-7-A)**
6. Remove the screws ①, then remove the capstan DD unit. **(Refer to Fig. 2-7-B)**
   (Be sure to support the capstan DD unit with your hand.)

INSTALLATION

Install new capstan DD unit in reverse steps of REMOVAL.

NOTE

1. Do not bend the limiter post.
2. Use the specified screw held to the DD unit.
3. Avoid getting grease on the reel belt.
4. Be sure to install in the EJECT position. **(Refer to Fig. 2-7-D, E)**
5. Install in the position where the capstan DD unit PCB reaches to the "B" position. **(Refer to Fig. 2-7-A)**
6. When installing the worm, be sure to unlock the hook ③ in the direction of arrow, and the cam 1 and cam 2 must be meshed smoothly. **(Refer to Fig. 2-7-A)**
7. When installing the deck bottom PCB, be sure to install the rotary switch in the EJECT position.
   The EJECT position is the point where the "A" tooth is aligned to "B".
   (Refer to Fig. 2-7-C)

CHECK AFTER INSTALLATION

1. Check if tape running is normal in PLAY mode.
2. Check if FF/REW mode works normally.

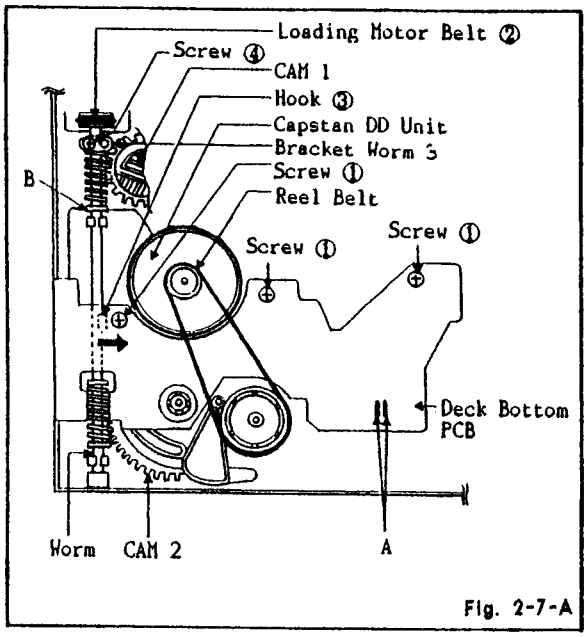


Fig. 2-7-A

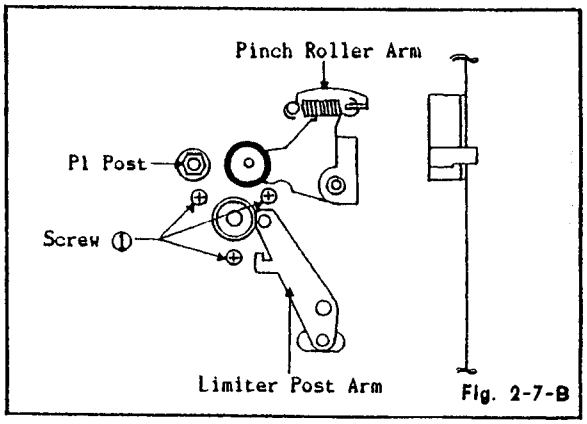


Fig. 2-7-B

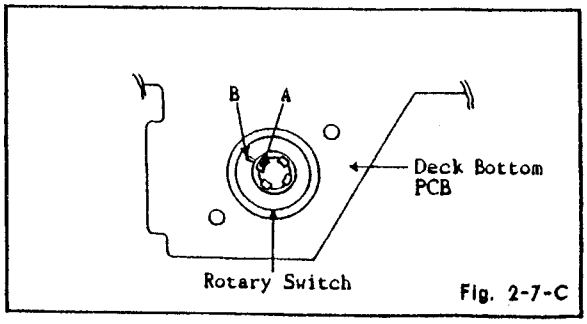


Fig. 2-7-C

MECHANICAL ADJUSTMENTS

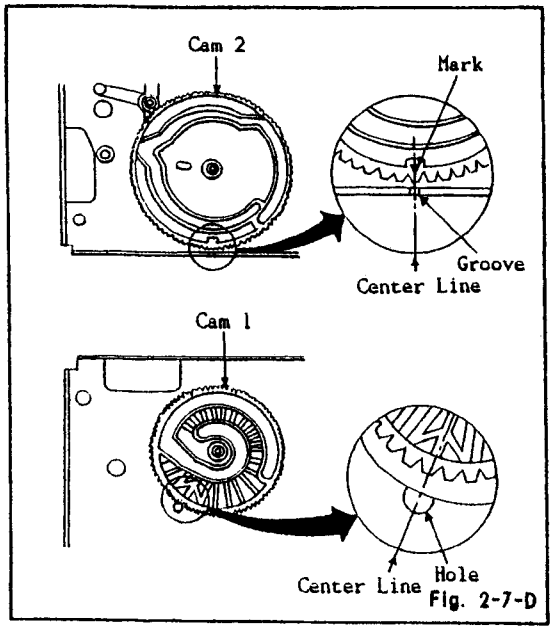


Fig. 2-7-D

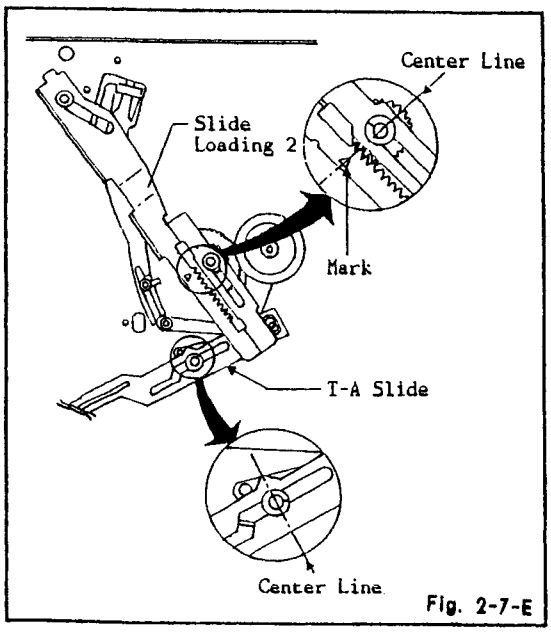


Fig. 2-7-E

2-9: TRANSISTOR PCB

REMOVAL

1. Insert a small flat-blade screwdriver into the transistor spring as shown in Fig. 2-8.
2. Hold both edges of the transistor PCB ("A" part) with your fingers and pull out the transistor PCB while turning the driver.

INSTALLATION

Install new transistor PCB in reverse steps of REMOVAL.

NOTE

1. The unit should be unplugged from the AC outlet.
2. Do not scratch or mar the cylinder.
3. Be careful not to split the transistor PCB.
4. If the transistor spring is broken when holding or removing the transistor PCB, replace with a new one.

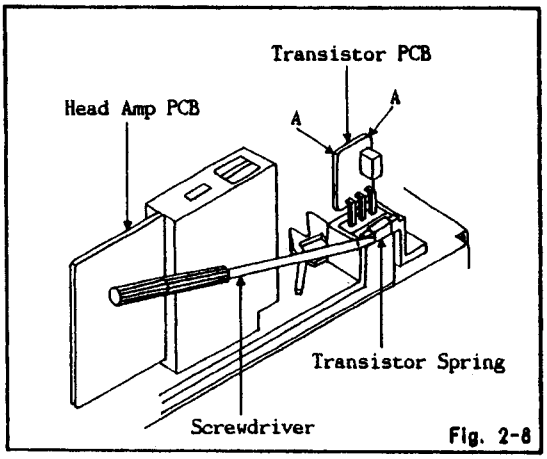


Fig. 2-8

3. CONFIRMATION AND ADJUSTMENT

3-1: CONFIRMATION OF FAST FORWARD TORQUE

CONFIRMATION

1. Set torque gauge (JG002G) on take-up reel disk, and place unit in FAST FORWARD mode. (Refer to Fig. 3-1)
2. Confirm that torque is more than 800g/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place. Push the FAST FORWARD button and the reel disk will begin to turn.

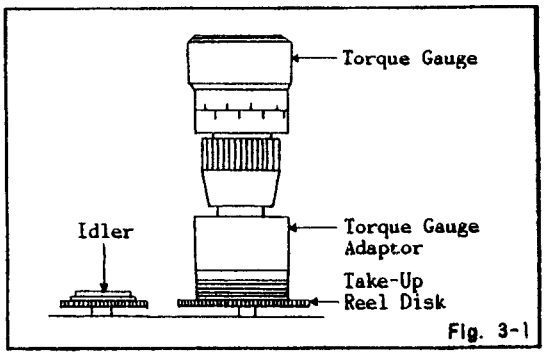


Fig. 3-1

3-2: CONFIRMATION OF REWIND TORQUE

CONFIRMATION

1. Operate within 4 or 5 seconds after the reel disk begins to turn.
2. Set torque gauge (JG002G) on supply reel Disk, and place the unit in REWIND mode. (Refer to Fig. 3-2)
3. Confirm that torque is more than 800g/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place. Push the FAST FORWARD button and the reel disk will begin to turn.

MECHANICAL ADJUSTMENTS

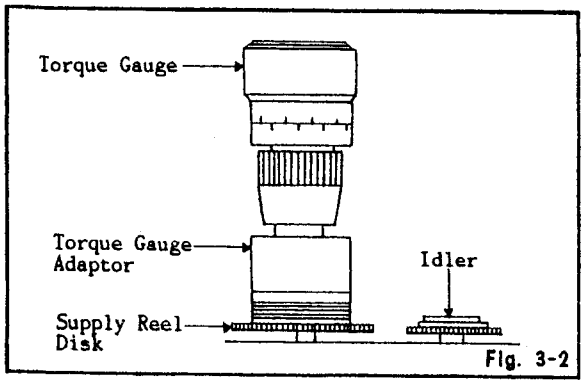


Fig. 3-2

3-3: CONFIRMATION OF PLAYBACK TAKE-UP TORQUE

CONFIRMATION

1. Set the torque gauge (JG002F) on the rewind reel disk, then check PB mode.
2. Make sure that the torque covers the range, 60~150g/cm.

3-4: CONFIRMATION OF REEL BRAKE TORQUE

CONFIRMATION (Refer to Fig. 3-3-A)

(Take-Up Reel Brake)

1. Set to STOP mode.
2. Set the torque gauge (JG002G) to the take-up reel and turn it counter-clockwise.
3. Confirm that it is more than 200g/cm at that time.

CONFIRMATION (Refer to Fig. 3-3-B)

(Supply Reel Brake)

1. Set to STOP mode.
2. Set the torque gauge (JG002G) to the supply reel and turn it clockwise.
3. Confirm that it is more than 200g/cm at that time.

NOTE

Separate the idler from the reel and confirm the brake torque.

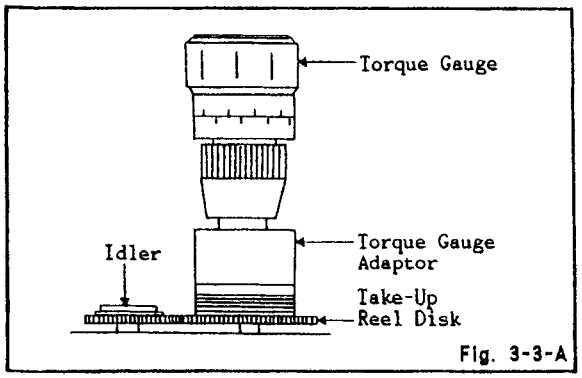


Fig. 3-3-A

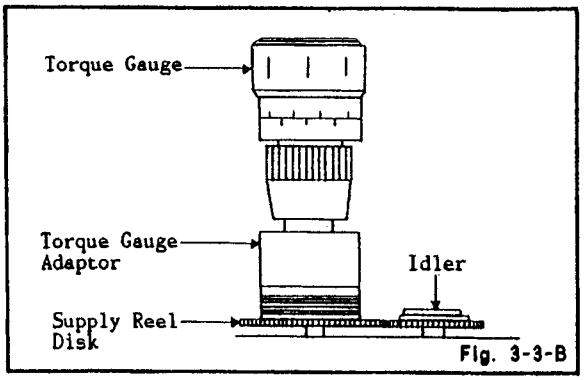


Fig. 3-3-B

NOTE

Refer to the table below for possible cause of problems when confirmation cannot be made for indicated items.

CONFIRMATION ITEM	CHECK POINT (REPLACEMENT)
3-1 3-2 3-3	Capstan belt may be stretched. Clutch may be worn out (if so, change reel disk.) Idler ass'y may be worn out.
3-4	Main brake belt may be worn out.

3-5: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

ADJUSTMENT

1. Turn the POWER SW ON.
2. Set the master plane (JG022) at mechanism framework, taking care not to scratch the drum, as shown in Fig. 3-4-A.
3. Confirm that the reel disk is lower than "A" of the reel disk height adjustment jig, (JG024) on the master plane and higher than "B" as shown in Fig. 3-4-B.
4. When it does not satisfy above items, adjust to less than 7.5±0.2mm with the height adjustment washer.

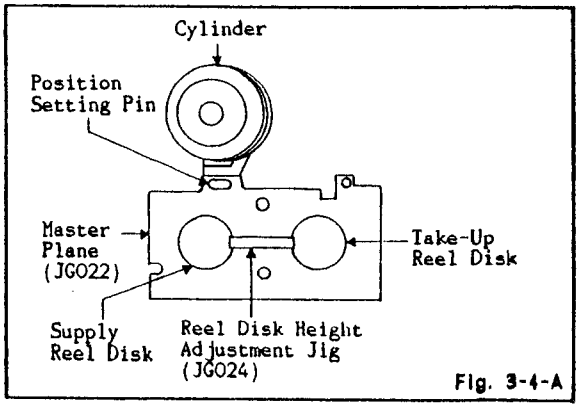


Fig. 3-4-A

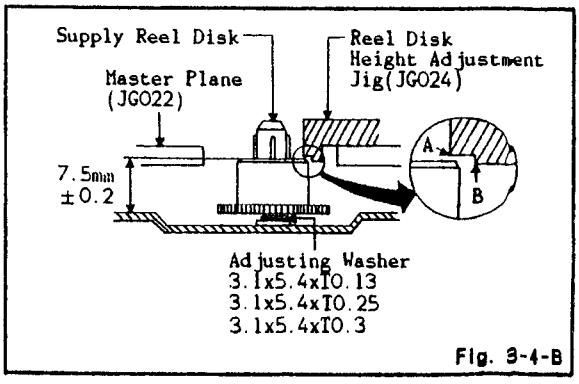


Fig. 3-4-B

MECHANICAL ADJUSTMENTS

3-6: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

CONFIRMATION

1. Turn on the power and set to the PLAY mode by using the tension post adjustment jig (JG036).
2. As soon as the guide rollers, L, R begin to draw the tape from the cassette, the tension post shall move to the left, thus loading will start.
3. Move the tension band adjuster to the "A" or the "B" direction to set tension post adjusting jig red line to the round of the tension post. **(Refer to Fig. 3-5)**
4. Confirm that the video tape is not curling at the flange of P1 post or is not running on flanges.

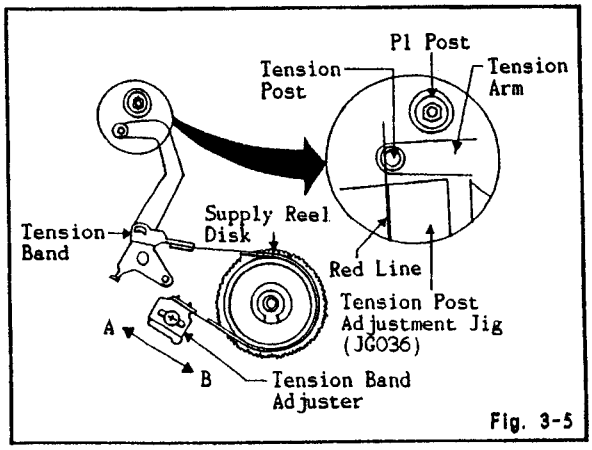


Fig. 3-5

3-7: CONFIRMATION AND ADJUSTMENT OF BACK TENSION ON PLAYBACK

CONFIRMATION

1. Load a E-60 cassette tape recorded in standard speed mode
2. Set the unit to the PLAY mode.
3. Install the tentelometer as shown in **Fig. 3-6.** Confirm the value is within 25~35g/cm at this time.
4. Confirm the video tape is running tight on P1 post.
5. Confirm there is no sag or damage on edges of the tape both in the beginning and ending of the video tape.
6. Adjust when it does not satisfy the above items.
7. Set the tension arm spring to "B" direction when the tentelometer indicates less than 25g/cm. **(Refer to Fig. 3-6)**
   Set the tension arm spring to "A" direction when the tentelometer indicates more than 35g/cm. **(Refer to Fig. 3-6)**

NOTE

The tentelometer should not touch F/E Head, cylinder or other components in the tape path.

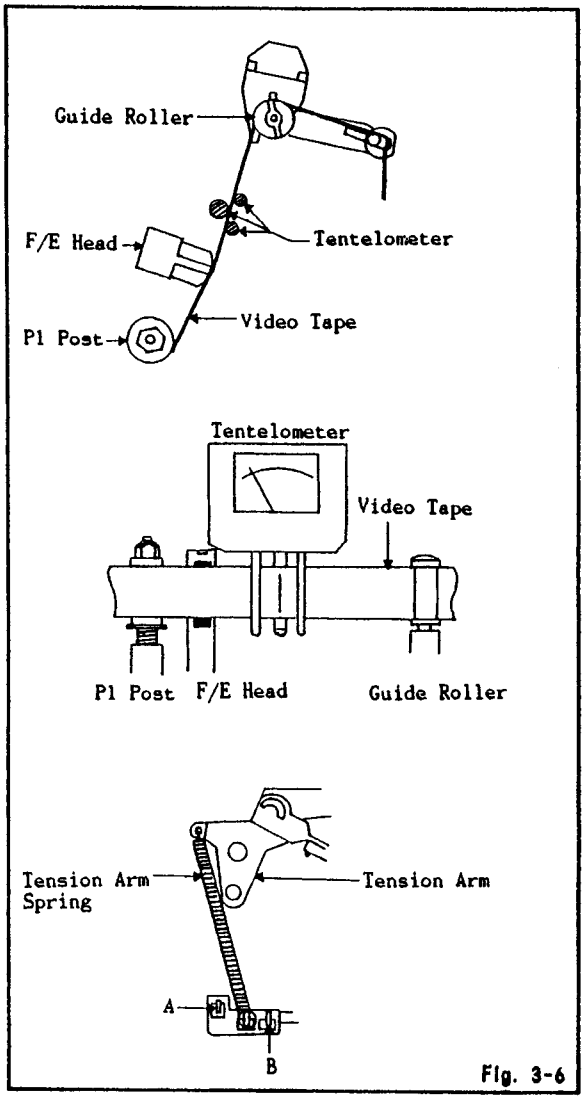


Fig. 3-6

4. TAPE RUNNING CONFIRMATION AND ADJUSTMENT

Tape running is adjusted precisely at the factory. Normally, it is not necessary to make adjustments. It is necessary to confirm and make adjustments when the parts of the tape running mechanism are replaced because of extensive usage or failure.

4-1: P1 POST

ADJUSTMENT

1. Set to the EJECT mode. Install the P1/P4 post height adjustment jig (JG035) to the main chassis.
2. Adjust the P1 post with P1/P4 post height adjustment jig "A" part. **(Refer to Fig.4-1)**

4-2: P4 POST

ADJUSTMENT

1. Set to the EJECT mode. Install the P1/P4 post height adjustment jig (JG035) to the main chassis.
2. Adjust the P4 post with P1/P4 post height adjustment jig "B" part. **(Refer to Fig.4-1)**

MECHANICAL ADJUSTMENTS

NOTE

1. Adjust the guide roller. **(Refer to Item 4-3. Confirm there no crease on the edge of the tape).**
2. Do not move the nut.
3. Fix P4 post with screw lock.
4. Adjust the tape running. **(Refer to Item 4-6)**

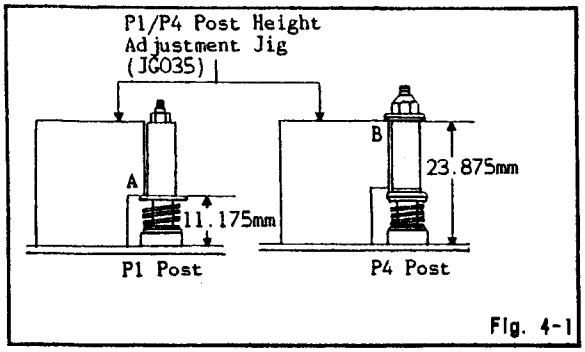


Fig. 4-1

4-3: GUIDE ROLLER

ADJUSTMENT

1. Switch on main power and then connect monitor output cord and video input cord to proper positions.
2. Insert the VHS adjustment tape **(JG001)** into the unit.
3. Connect CH-1 and CH-2 of oscilloscope to envelope output and to the test point of switching pulse, respectively.
4. Carry out this adjustment in PLAY mode.
5. Trigger with SW pulse and observe the envelope. **(Refer to Fig. 4-2-A)**
6. Adjust the guide roller height while observing the envelope, and make the envelope flat. Adjust the envelope so that the flatness will not be affected even when the tracking control knob is turned. (Use the adjustment screwdriver **JG005**).
7. When the tracking control knob is turned (the point that the envelope waveform starts to reduce), adjust the envelope so that its A:B ratio is better than 10:7. **(Refer to Fig. 4-2-B)**
8. Adjust the PB switching position **(ELECTRICAL ADJUSTMENS : ITEM 2-1)** in the PLAY mode.

NOTE

After adjustment, confirm and adjust A/C head tilt. **(Refer to Item 4-4)**

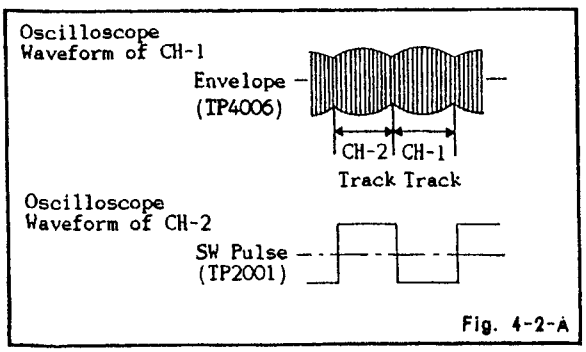


Fig. 4-2-A

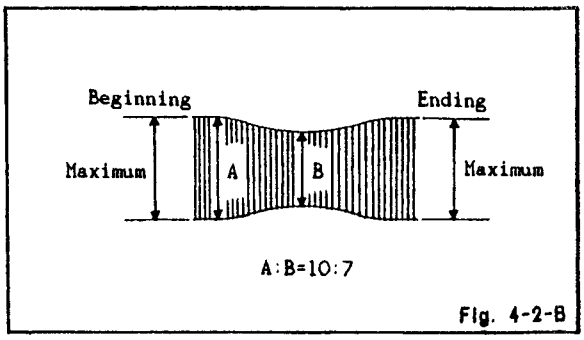


Fig. 4-2-B

4-4: CONFIRMATION AND ADJUSTMENT OF A/C HEAD TILT

ADJUSTMENT

When the tape is running abnormally, perform the following adjustments.

1. Check the tape running condition with the unit in the PLAY mode using the **E-60** tape.
2. Confirm that there is no crease on the tape between the guide post and guide roller(R) and the tape is running smoothly. (It is absolutely impossible to get satisfactory sound if the tape is distorted between the A/C head and guide post.)
3. If the tape still does not run smoothly, turn the screw ① and adjust the tilt of the A/C head. Do not move the guide post. **(Refer to Fig. 2-2)**

4-5: ADJUSTMENT OF A/C HEAD HEIGHT AND AZIMUTH

ADJUSTMENT

1. Playback a VHS adjustment tape **(JG001)** and observe the waveform at the audio output terminal.
2. Turn the screw ② slowly to change the height of the A/C head. Adjust the height so that the audio output becomes maximum. **(Refer to Fig. 2-2)**
3. Adjust the nut ④. **(Refer to Fig. 2-2)** until the height of the A/C head reaches the position against the tape as shown in **Fig. 4-3.**

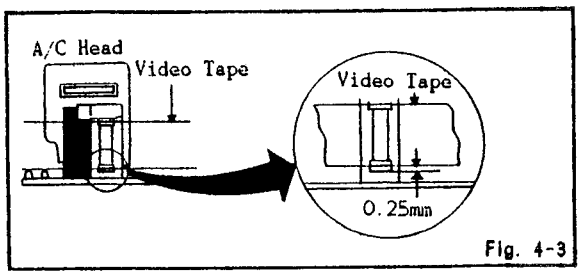


Fig. 4-3

4-6: TAPE RUNNING ADJUSTMENT

1. Adjust the height of reel disk. **(Refer to Item 2-1)**
2. Adjust the P1 post, P4 post. **(Refer to Item 4-1, 2)**
3. Confirm and adjust tension post position. **(Refer to Item 3-6)**
4. Adjust the guide roller. **(Refer to Item 4-3)**
5. Adjust the A/C head height and azimuth. **(Refer to Item 4-5)**
6. Adjust the A/C head tilt. **(Refer to Item 4-4)**
7. Set the tracking control to the center position. Turn X-nut adjustment screwdriver **(JG021)** until the envelope appears maximum.

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

1-1: Prepare the following measurement tools for the electrical adjustment.

1. Oscilloscope (2 channel type)
2. AC Voltmeter
3. Audio Oscillator
4. Frequency Counter
5. Spectrum Analyzer

2. ADJUSTMENT PROCEDURE

2-1: PB. SWITCHING POSITION

CONDITIONS

MODE - PLAYBACK
Input Signal - Standard Test Tape

NOTE

Tracking control should be set at click point.

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP2001** and CH-2 to **7 pin of CD8007.**
2. Playback the tape.
3. Adjust **VR2001** so that the waveform of the oscilloscope measures 6.5±0.5(H) at both leading and trailing edges.
(Refer to Fig. 2-1-A, B)

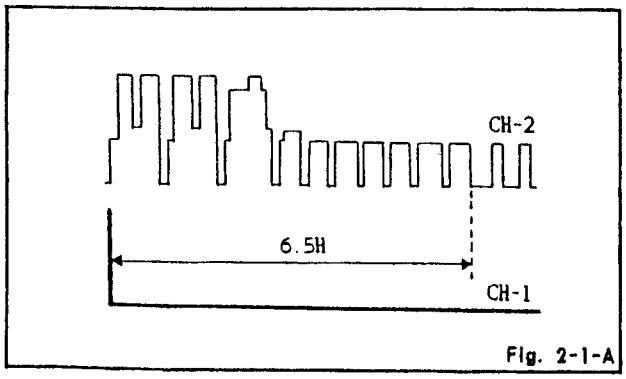


Fig. 2-1-A

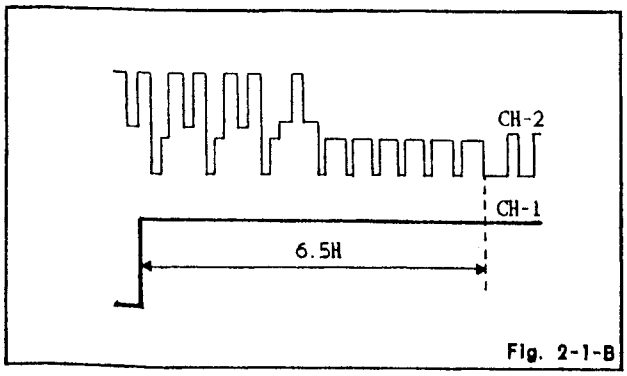


Fig. 2-1-B

2-2: TRACKING FIX

CONDITIONS

MODE - PLAYBACK
Input Signal - Standard Test Tape

NOTE

Tracking control should be set at click point.

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP2001** and CH-2 to **TP2003.**
2. Playback the tape.
3. Adjust **VR2002** so that the "T" portion measures -1.0±0.3msec.
(Refer to Fig. 2-2)

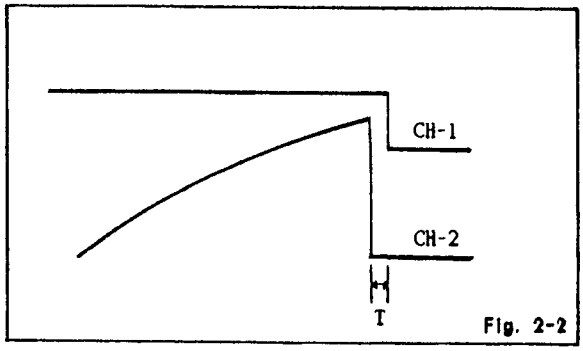


Fig. 2-2

2-3: PLAYBACK LUMINANCE LEVEL

CONDITIONS

MODE - PLAYBACK
Input Signal - Color Bar Test Tape

NOTE

Video out (7 pin of CD8007) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Connect the oscilloscope to **7 pin of CD8007.**
2. Playback the tape.
3. Adjust **VR4003** so that the signal becomes 2.0±0.1Vp-p as shown in **Fig. 2-3.**

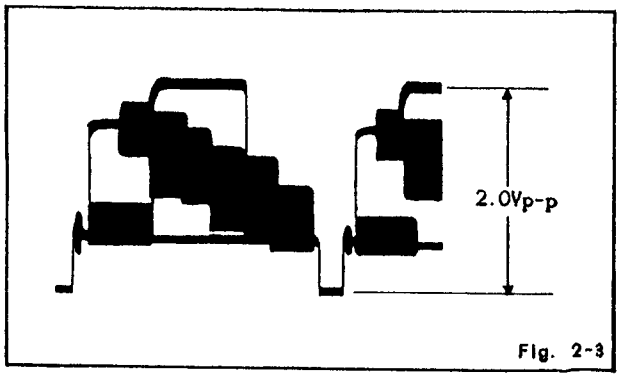


Fig. 2-3

ELECTRICAL ADJUSTMENTS

2-4: NOISE CANCEL

CONDITIONS

MODE - PLAYBACK
Input Signal - Color Bar Test Tape

NOTES

This adjustment must be done after adjustments in section 2-3.
Video out (7 pin of CD8007) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Connect CH-1 of the oscilloscope to **TP4003** and CH-2 on the oscilloscope to **TP4004.**
2. Reverse the waveform for CH-2 with an inverter and put both the waveforms for CH-1 and CH-2 together by pressing the ADD SW on the oscilloscope.
3. Adjust the **VR4005** so that the waveform of CH-1 is straight as shown in **Fig. 2-4.**

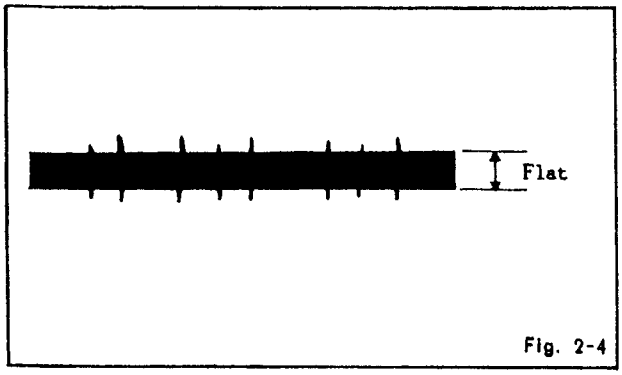


Fig. 2-4

2-5: E-E LEVEL

CONDITIONS

MODE - STOP
Input Signal - PAL Color Bar

NOTES

Video out (7 pin of CD8007) of the unit should be terminated with 75 ohm load.
Video in (5 pin of CD8007) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Input the color bar signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect the oscilloscope to **TP4005.**
3. Adjust **VR4004** so that the waveform measures 0.53±0.01Vp-p. **(Refer to Fig. 2-5)**

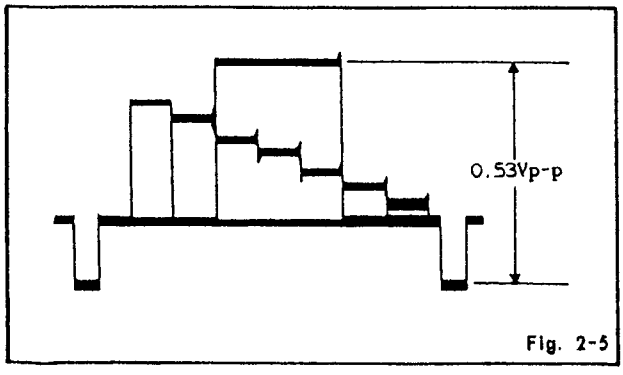


Fig. 2-5

2-6: CARRIER AND DEVIATION

CONDITIONS

MODE - STOP
Input Signal - PAL Color Bar

INSTRUCTIONS

1. Input the color bar signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect **TP4001** to the input terminal on the spectrum analyzer, then adjust 3.8MHz and 4.8MHz as shown in **Fig. 2-6** with **VR4001** and **VR4002.**

VR4001 (CARRIER)
VR4002 (DEVIATION)

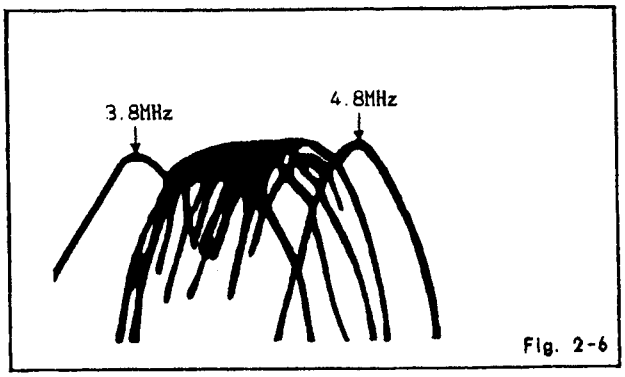


Fig. 2-6

2-7-A: SECAM IDENTIFICATION (1)

CONDITIONS

MODE - RECORD
Input signal - SECAM Color Bar

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **7 pin of CD8007** and CH-2 to **TP3702.**
2. Adjust **L3702** so that peak of waveform "A" and leading edge of video signal of waveform "B" may become same as shown in **Fig. 2-7.**

2-7-B: SECAM IDENTIFICATION (2)

CONDITIONS

MODE - RECORD
Input signal - SECAM RF signal

INSTRUCTIONS

1. Connect the oscilloscope to **TP3701.**
2. Receive SECAM RF signal at 33dB.
3. At this time, adjust **TP3701** to High Level with **VR3701**
4. Next, check that the **TP3701** will indicate Low Level with adjusting the output level to 31dB.
5. Receiving the PAL signal, check that the **TP3701** will indicate Low Level regardless of output strength.

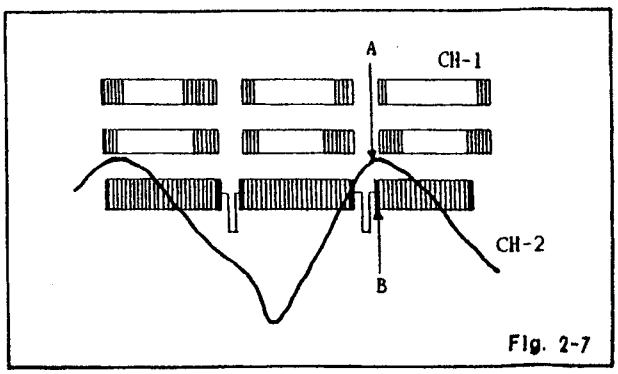


Fig. 2-7

ELECTRICAL ADJUSTMENTS

2-8: RECORD CURRENT

CONDITIONS

MODE - RECORD(SP MODE)
Input Signal - PAL Color Bar

INSTRUCTIONS

1. Input the color bar signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect CH-1 on the oscilloscope to **TP4101** and connect the GND side to **TP4102.** Connect CH-2 on the oscilloscope to **7 pin of CD8007.** Reduce REC.-Luminance signal factors by turning **VR4102** fully counter-clockwise.
3. Adjust **VR4101** so that the cyan level becomes 30±2mVp-p as shown in **Fig. 2-8-A.**
4. Adjust **VR4102** so that the horizontal sync level becomes 120±5mVp-p as shown in **Fig. 2-8-B.**

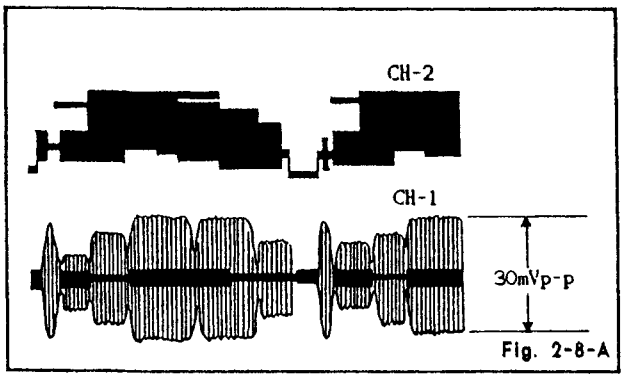


Fig. 2-8-A

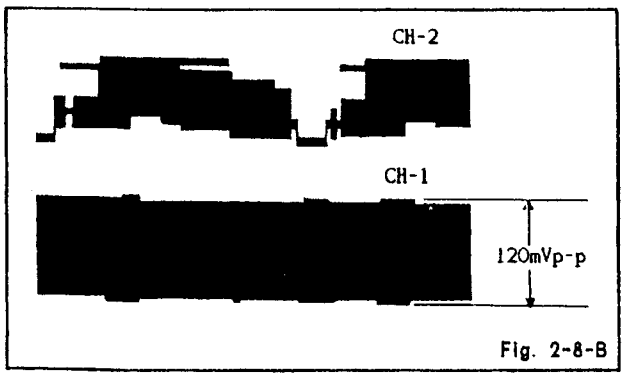


Fig. 2-8-B

2-9: AUDIO BIAS CURRENT

CONDITIONS

MODE - RECORD
Input Signal - Audio Signal : No Signal
Video Signal : PAL Color Bar

INSTRUCTIONS

1. Input the video signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect the AC voltmeter to as shown then adjust the voltage to 3.3±0.1mVrms with **VR5002.(Refer to Fig. 2-9)**

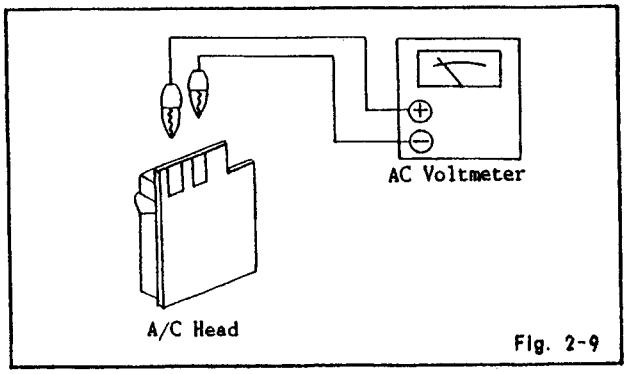


Fig. 2-9

2-10: PLAYBACK AUDIO LEVEL

CONDITIONS

MODE - Self(RECORD and PLAYBACK)(SP MODE)
Input Signal - Audio Signal : 1KHz 300mVrms
Video Signal : PAL Color Bar

INSTRUCTIONS

1. Input the video signal to the **VIDEO IN (5 pin of CD8007).**
2. Input the audio signal to the **AUDIO IN (1 pin of CD8007).**
3. Connect the AC voltmeter to **AUDIO OUT (3 pin of CD8007.)**
4. Record and then playback the audio signal as specified.
5. Adjust **VR5001** so that the playback output may become 390±10mVrms.

2-11: CLOCK

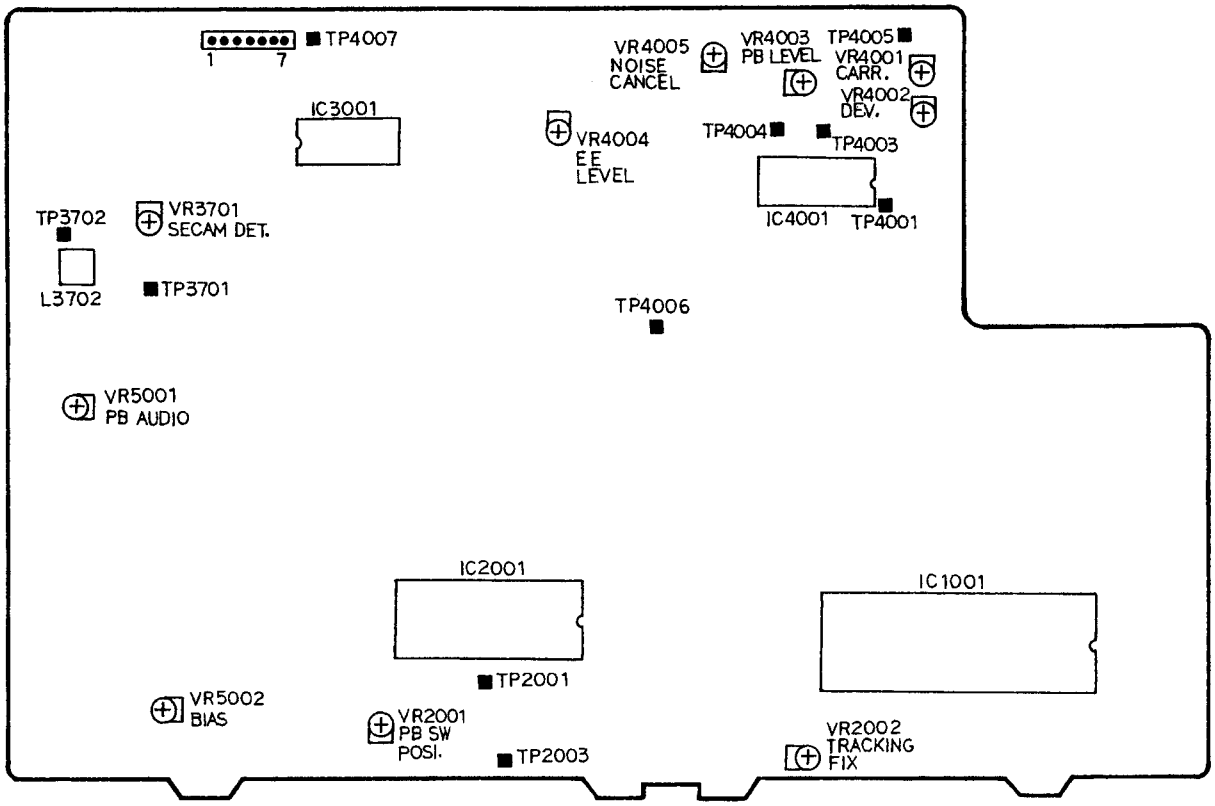
CONDITIONS

MODE - STOP
POWER ON
CLOCK SET

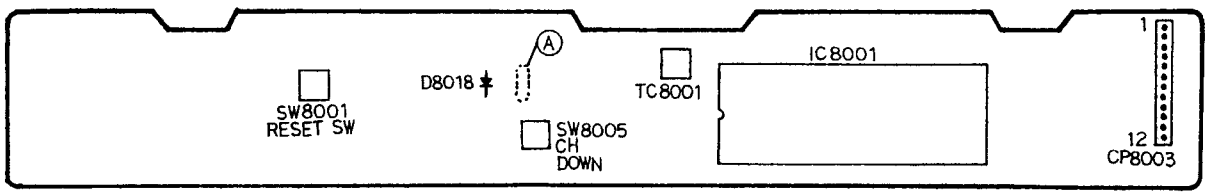
INSTRUCTIONS

1. Add the DIODE (1SS132) to the position Ⓐ before inserting the AC plug. Press the SYSTEM RESET SW (SW8001), then insert the AC plug. **(Refer to MAJOR COMPONENTS LOCATION GUIDE).**
2. Connect the frequency counter to **1 pin of CD8003.**
3. Adjust **TC8001** so that the value of frequency counter is within 174753.4±0.3Hz.
4. After the adjusting, remove the DIODE. Then reset the SYSTEM RESET SW. (After the adjusting, if the SYSTEM RESET SW is not reset, the General Operating does not work).

MAJOR COMPONENTS LOCATION GUIDE



MAIN P.C.BOARD



OPERATION 1 P.C.BOARD

ELECTRICAL ADJUSTMENTS

TV SECTION

3. BASIC ADJUSTMENTS

3-1: VIF AND AFT

NOTE
Connect input and output terminal of the Sweep-Marker Generator to circuit as shown in Fig. 3-1-a, then adjust it.

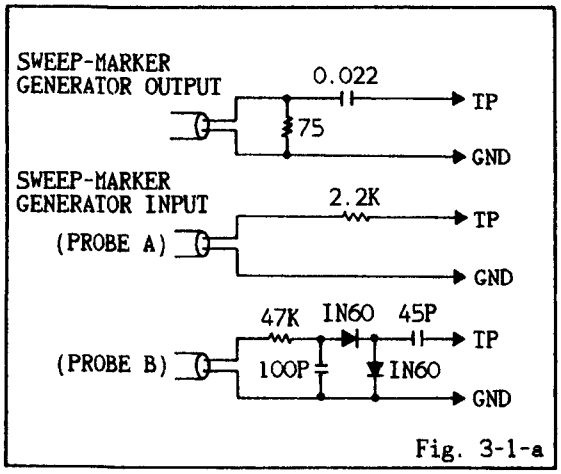
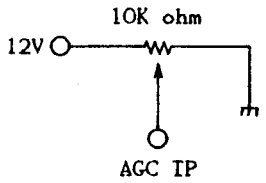


Fig. 3-1-a

1. Connect output terminal of the Sweep-Marker Generator to TP001.
2. Connect input terminal of the Sweep-Marker Generator to TP007. (PROBE A)
3. Connect the 10K ohm variable resistor to IF AGC terminal (TP004), 12V line and ground, then adjust to make the waveform of the oscilloscope readable.



4. Adjust **L204** until the waveform marker (38.9MHz) becomes as shown in Fig. 3-1-b

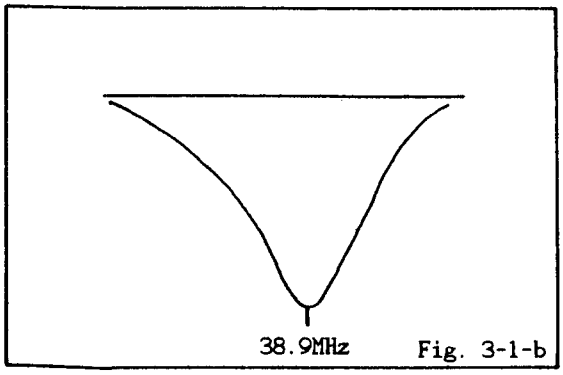


Fig. 3-1-b

5. Disconnect output terminal of the Sweep-Marker Generator from TP001, then connect it to TP of the Tuner Pack. (Connect the 2.7K ohm resistor between them.)
6. Disconnect input terminal of the Sweep-Marker Generator from TP007, then connect it to TP012. (PROBE B)
7. Adjust **L207** until the waveform markers (32.4MHz) becomes as show in Fig. 3-1-c.

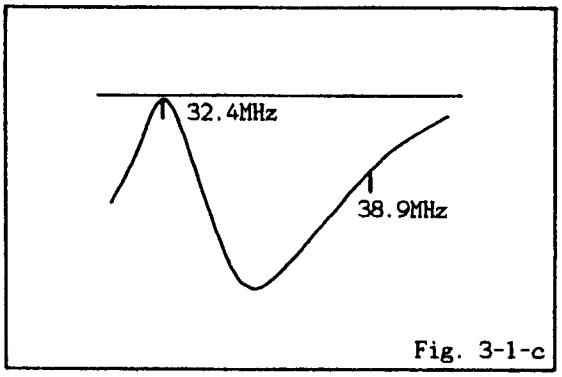


Fig. 3-1-c

8. Disconnect input terminal of the Sweep-Marker Generator from TP012, then connect it to TP007. (PROBE A)
9. Connect the 100 ohm resistor between TP009 and TP010.
10. Adjust **L206** until the waveform becomes as shown in Fig. 3-1-d.

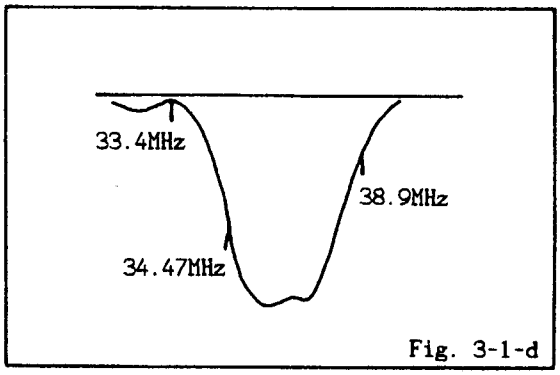


Fig. 3-1-d

11. Disconnect the 10K ohm variable resistor and 100 ohm resistor.
12. Input a 38.9MHz signal to TP of the Tuner Pack. (Connect the 2.7K ohm resistor between then.)
13. Connect the digital voltmeter to TP006.
14. Adjust **L203** until the AFT ON mode voltage is as same as the AFT OFF mode voltage.

3-2: BELL FILTER

NOTE
Connect input and output terminal of the Sweep-Marker Generator to circuit as shown in Fig. 3-2-a, then adjust it.

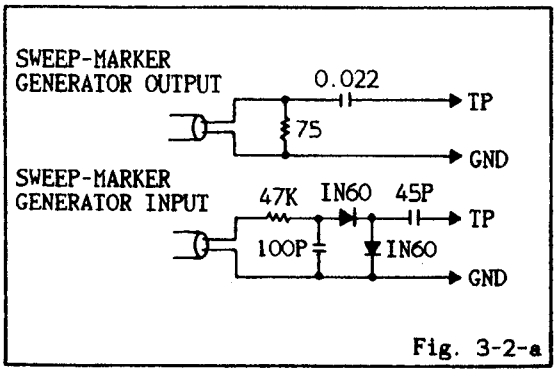


Fig. 3-2-a

ELECTRICAL ADJUSTMENTS

1. Connect output terminal of the Sweep-Marker Generator to TP of the Tuner Pack.
2. Connect input terminal of the Sweep-Marker Generator to TP966.
3. Adjust **L956** until the waveform becomes as shown in **Fig. 3-2-b.**

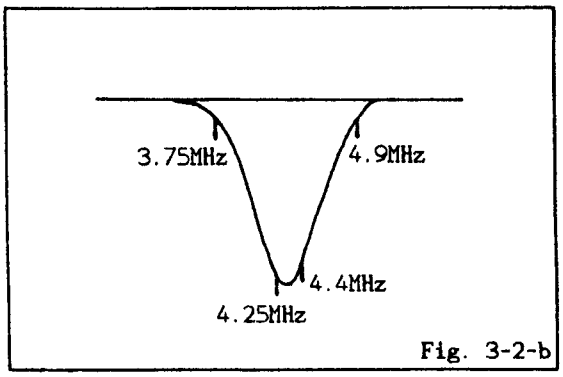


Fig. 3-2-b

3-3: SECAM IDENT

1. Receive the SECAM Color Bar Pattern.
2. Connect the pin 31 of IC951 to earth pattern.
3. Connect the pin 9 of IC951 to earth pattern.
4. Connect the digital voltmeter to TP963.
5. Measure the voltage in TP963.
6. Disconnect the SECAM Color Bar Pattern.
7. Disconnect the pin 9 of IC951 from earth pattern.
8. Input a 4.34MHz (100dB) signal to pin 9 of IC951.
9. Adjust **L957** until the voltage in TP963 is as same as the voltage in step 5.
10. Disconnect the pin 31 of IC951 from earth pattern.

3-4: SECAM PLL

1. Receive the SECAM Color Bar Pattern.
2. Connect the oscilloscope to TP965.
3. Adjust **VR953** until the voltage is DC3V.

3-5: SECAM PHASE

1. Receive the SECAM Color Bar Pattern.
2. Set the PAL/SECAM switch to SECAM position.
3. Adjust **VR951** and **VR952** until white part of the pattern is not changed even though you turn Color control from minimum to maximum.

3-6: SECAM LEVEL

1. Receive the SECAM Color Bar Pattern.
2. Connect CH-1 on the oscilloscope to pin 20 of IC951 and CH-2 to pin 23 of IC951.
3. Adjust **VR954** until the waveform size of CH-1 is as same as the waveform size of CH-2.

3-7: RF AGC

NOTE
Make these adjustments after doing adjustments in section 3-1.

3-7-A: In case of weak electric field.

1. Receive the noisy channel.
2. Adjust **VR201** until noise is at minimum.
3. Change the channel, confirm other channels are normal.

3-7-B: In case of strong electric field. (Diagonal streaks indicate radio frequency interference.)

1. Adjust **VR201** until diagonal streaks are at minimum.
2. If there is still a problem after adjusting VR201, install the attenuator to the antenna terminals, then repeat step 1.
3. Confirm noise will appear.
4. Change the channel, confirm other channels are normal.

3-8: CUT OFF

1. Receive the color bar pattern.
2. Adjust remote control until the bright and contrast controls are at minimum position.
3. Connect the oscilloscope to TP017.
4. Adjust the screen control until voltage is DC120V. **(Refer to Fig. 3-3)**

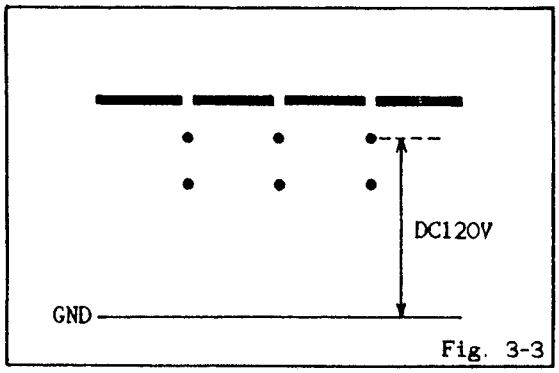


Fig. 3-3

3-9: FOCUS

1. Receive the broadcasting signal.
2. Adjust the Focus control until picture is distinct.

3-10: VERTICAL SIZE

1. Receive the Crosshatch Pattern from the Color Bar Generator.
2. Adjust the Bright and Contrast controls until the crosshatch pattern is distinct.
3. Adjust **VR401** until the center of crosshatch is square.
4. Receive broadcasting signal, then confirm picture is normal

3-11: VERTICAL POSITION

1. Receive the Color Bar Pattern.
2. Adjust **SW401** until horizontal line of the color bar comes to around center of the CRT.

3-12: HORIZONTAL POSITION

1. Receive the Color Bar Pattern.
2. Adjust **VR402** until the color width of both of screen edges are equal.
3. Receive broadcasting signal, then confirm picture is normal

3-13: HUE DELAY

1. Receive the DEM Pattern.
2. Connect the CH-1 on the oscilloscope to pin 9 of CP901 and CH-2 to pin 7 of CP901.
3. Adjust **L958** and **VR955** until the waveform is straight line. **(Refer to Fig. 3-4)**

ELECTRICAL ADJUSTMENTS

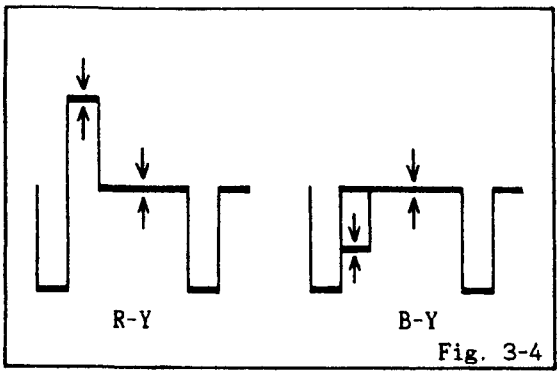


Fig. 3-4

3-14: SUB BRIGHT

1. Receive the Monochrome Pattern.
2. Press the NORMAL button on the remote control unit.
3. Adjust **VR606** until 0% of gray scale is black.

3-15: SUB COLOR

3-15-A: For PAL

1. Receive the Color Bar Pattern.
2. Press the NORMAL button on the remote control unit.
3. Connect the oscilloscope to TP015.
4. Adjust **VR604** until red color level is 75%.

3-15-B: For SECAM

1. Receive the SECAM Color Bar Pattern.
2. Press the NORMAL button on the remote control unit.
3. Connect the oscilloscope to TP015.
4. Adjust **VR602** until red color level is 75%.

4. PURITY AND CONVERGENCE ADJUSTMENT

NOTE
1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east and west to reduce the terrestrial magnetism.
3. Power ON the unit and demagnetize with a Degauss Coil.

4-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 4-1)**

[If the deflection yoke and magnet are in one body, untighten the screw for the body.]

2. Receive the green raster pattern from color bar pattern.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch to change the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 colors crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

4-2: PURITY

NOTE
Make these adjustments after doing adjustments in section 4-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets with the same angle to change to green on the screen center.
   Also, adjust the pair of purity magnets to equal the width of both ends color
3. Move the deflection yoke backward (To neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm the color concerning to the red and blue.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

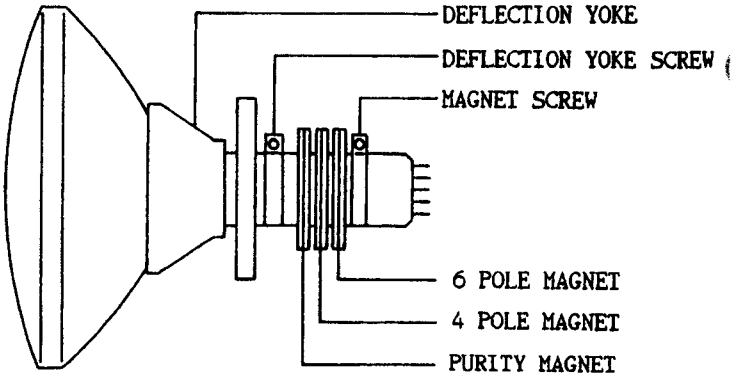


Fig. 4-1

ELECTRICAL ADJUSTMENTS

4-3: STATIC CONVERGENCE

NOTE
Make these adjustments after doing adjustments in section 4-2.

1. Receive the crosshatch pattern from color bar generator.
2. Combine red and blue of the 3 colors crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

4-4: DYNAMIC CONVERGENCE

NOTE
Make these adjustments after doing adjustments in section 4-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and to right/left. **(Refer to Fig. 4-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 4-2-b)**

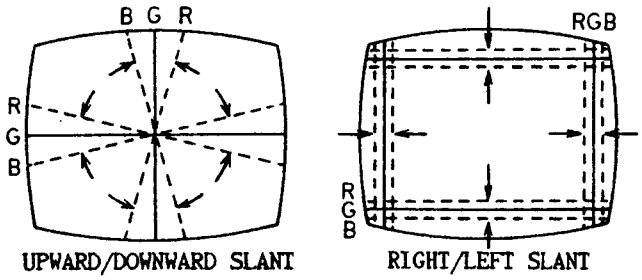
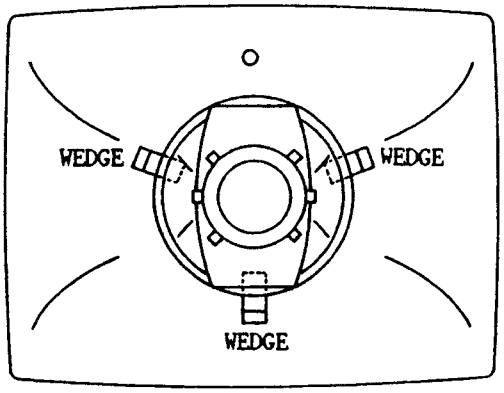


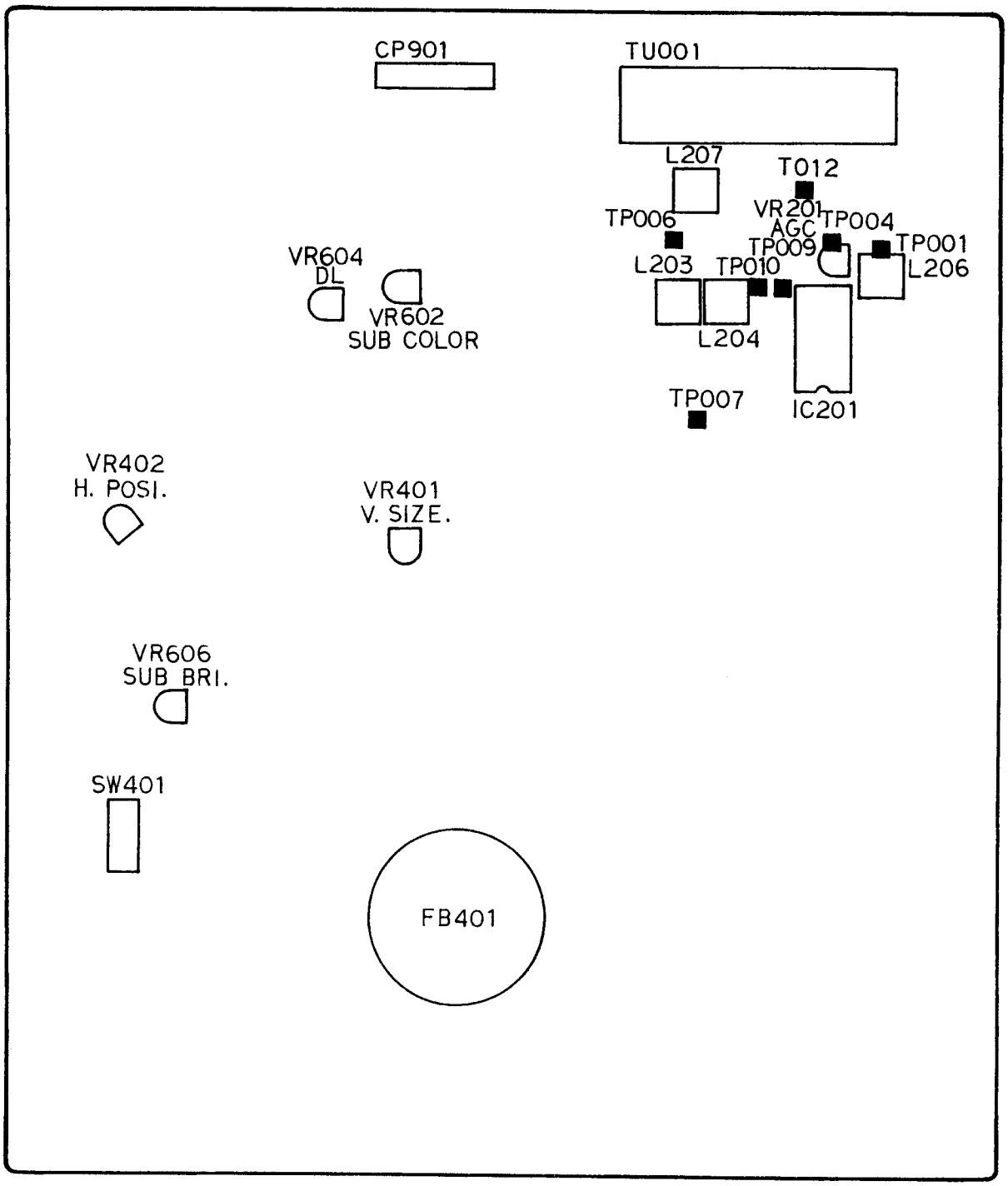
Fig. 4-2-a



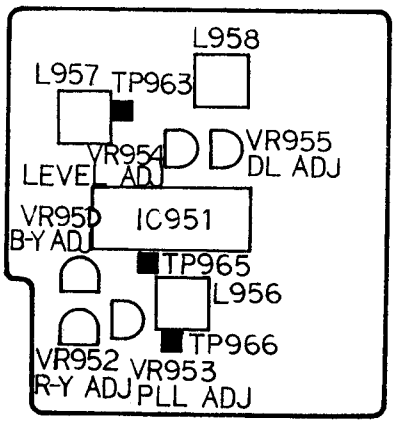
WEDGE POSITION

Fig. 4-2-b

MAJOR COMPONENTS LOCATION GUIDE

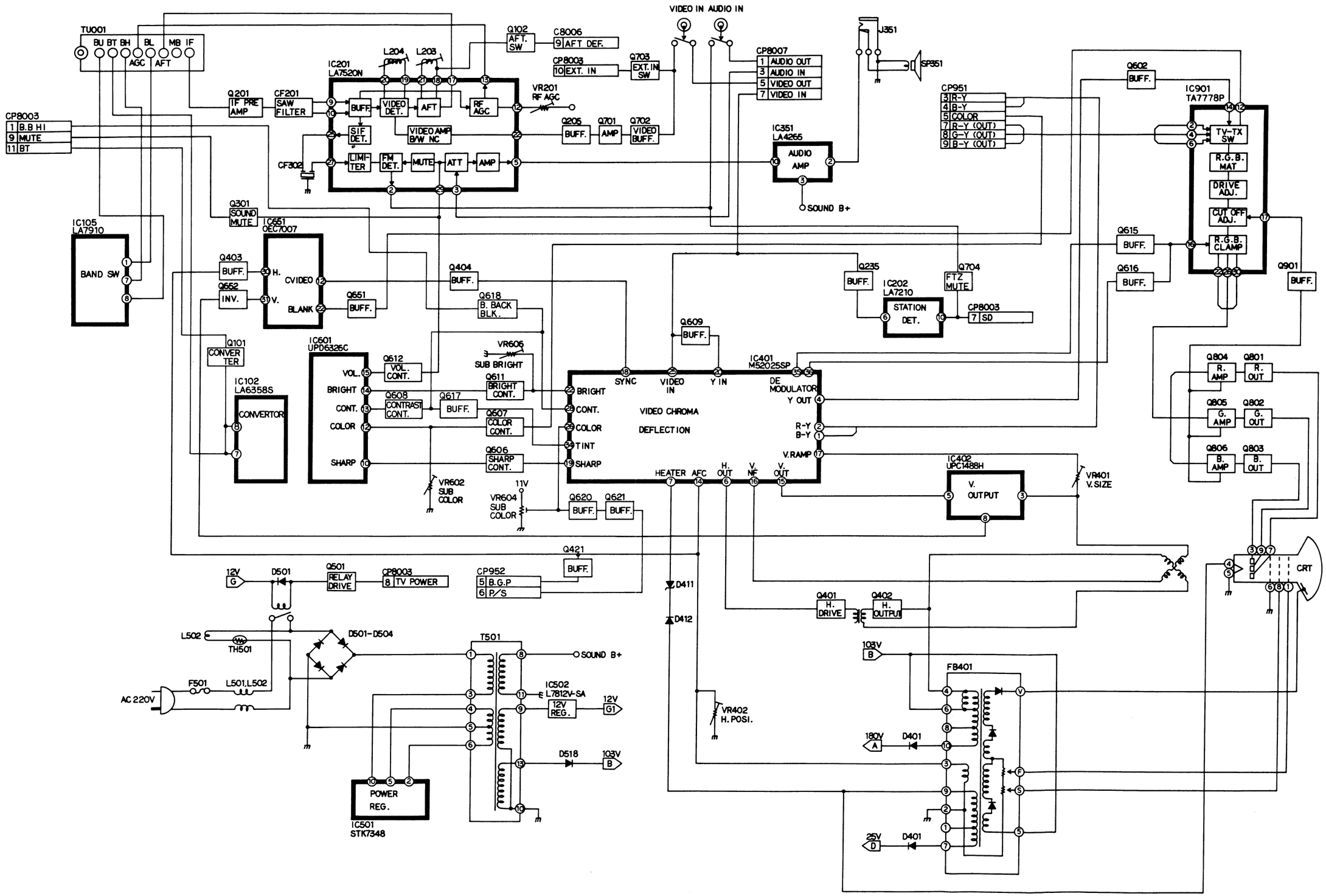


MAIN PCB



SECAM PCB

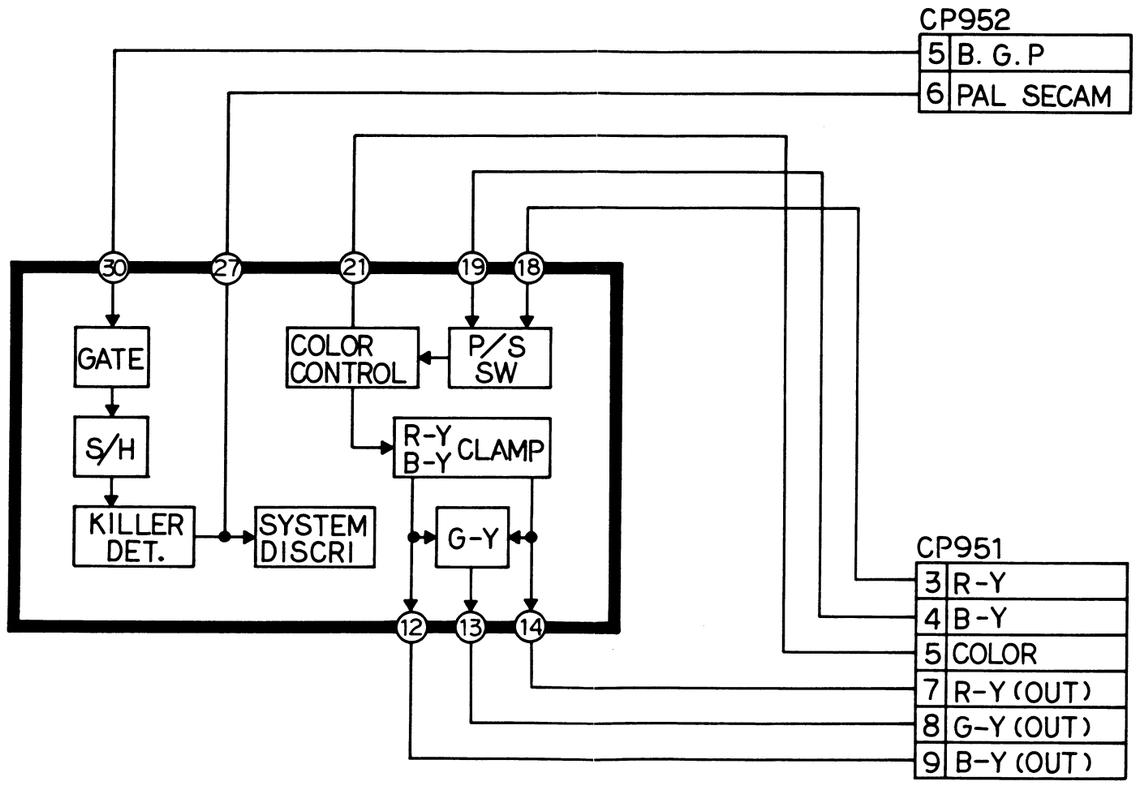
TV IF/CHROMA/AKB/DEFLECTION/POWER/AUDIO BLOCK DIAGRAM



TV IF/CHROMA/AKB/DEFLECTION/ POWER/AUDIO BLOCK DIAGRAM

1-9105

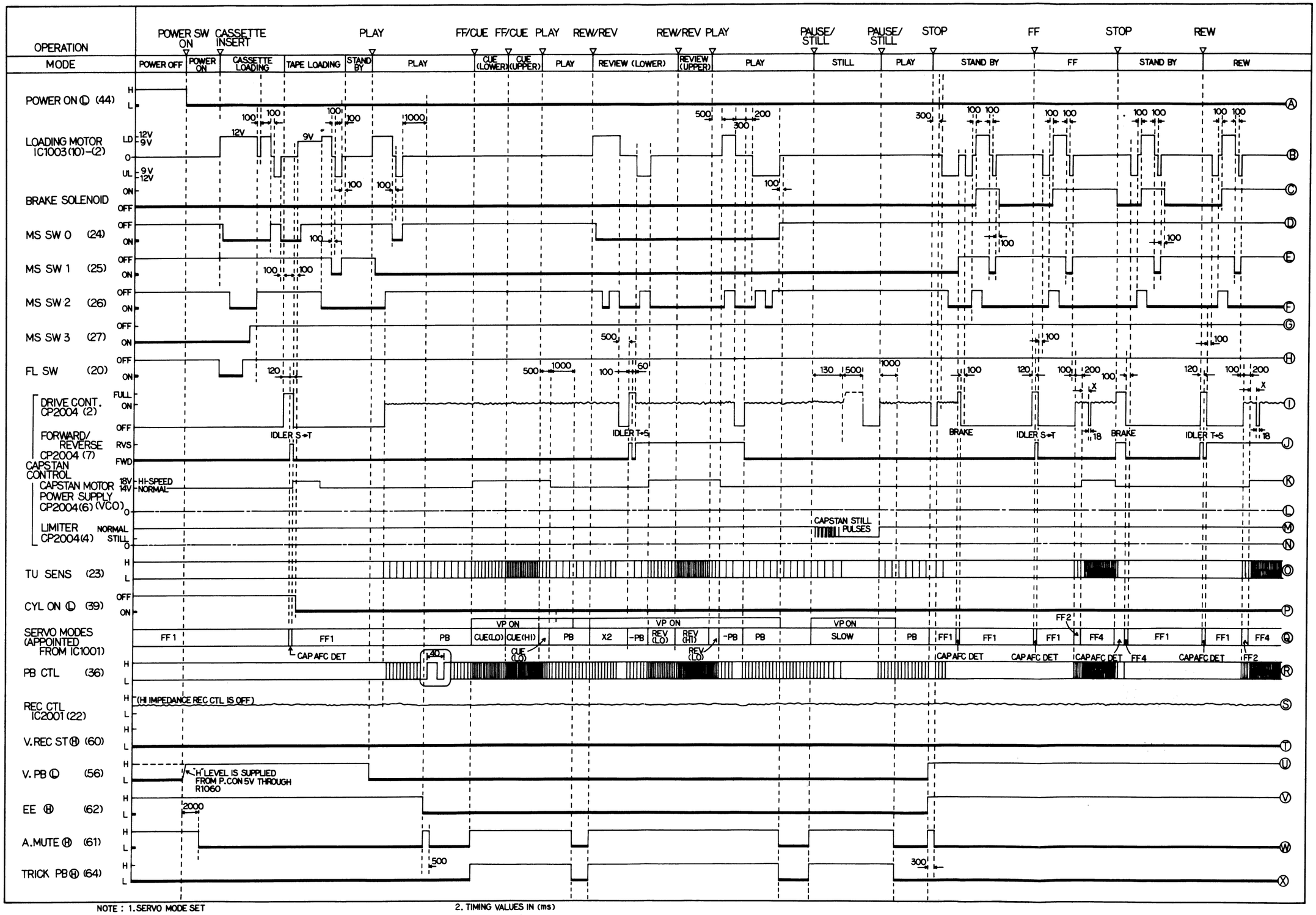
TV SECAM BLOCK DIAGRAM



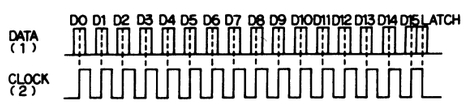
TV SECAM BLOCK DIAGRAM

3-2644

TIMING CHART



NOTE : 1. SERVO MODE SET



2. TIMING VALUES IN (ms)

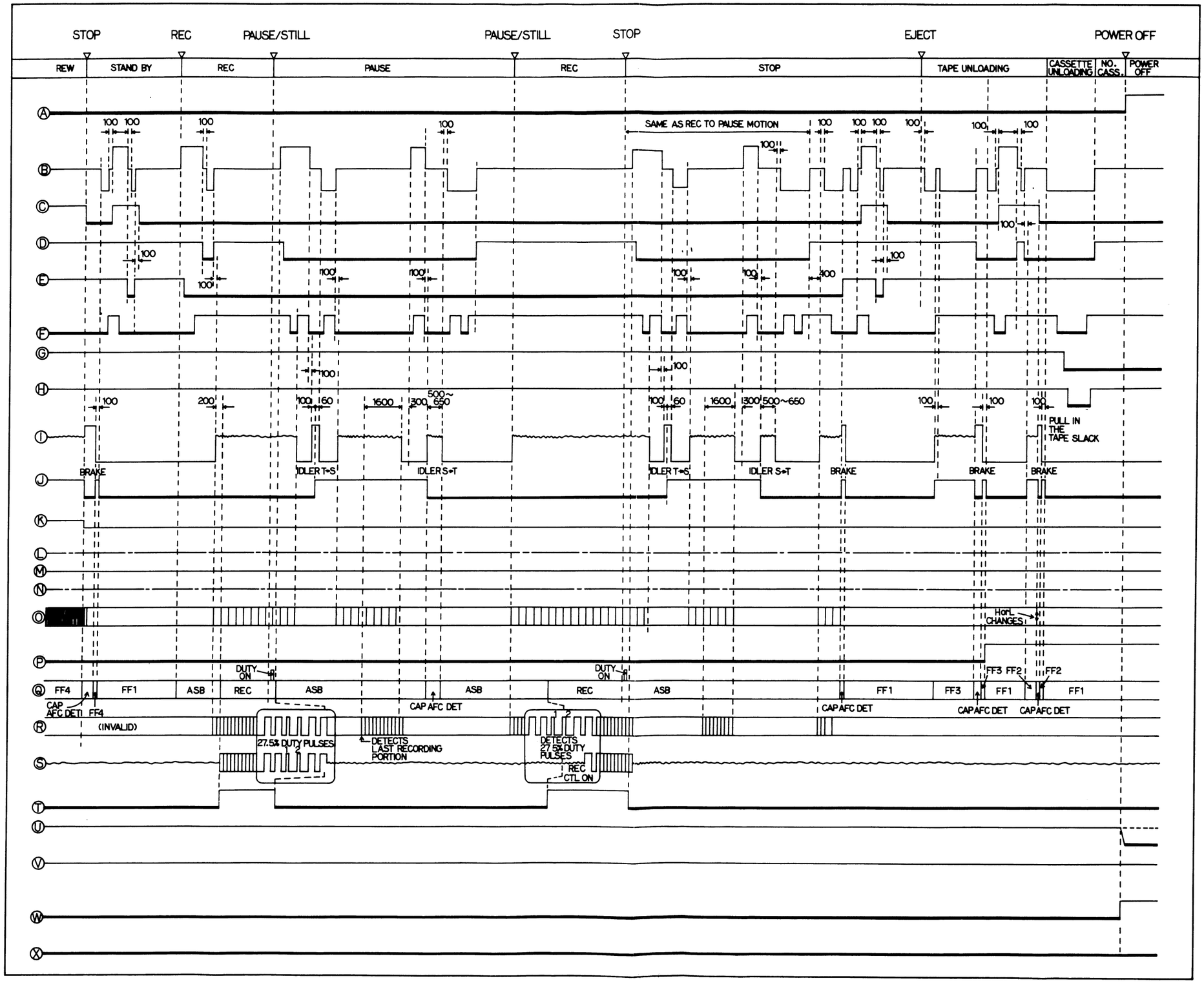
3. TIMING WAVE FORMS

HIGH — STAY HIGH or LOW

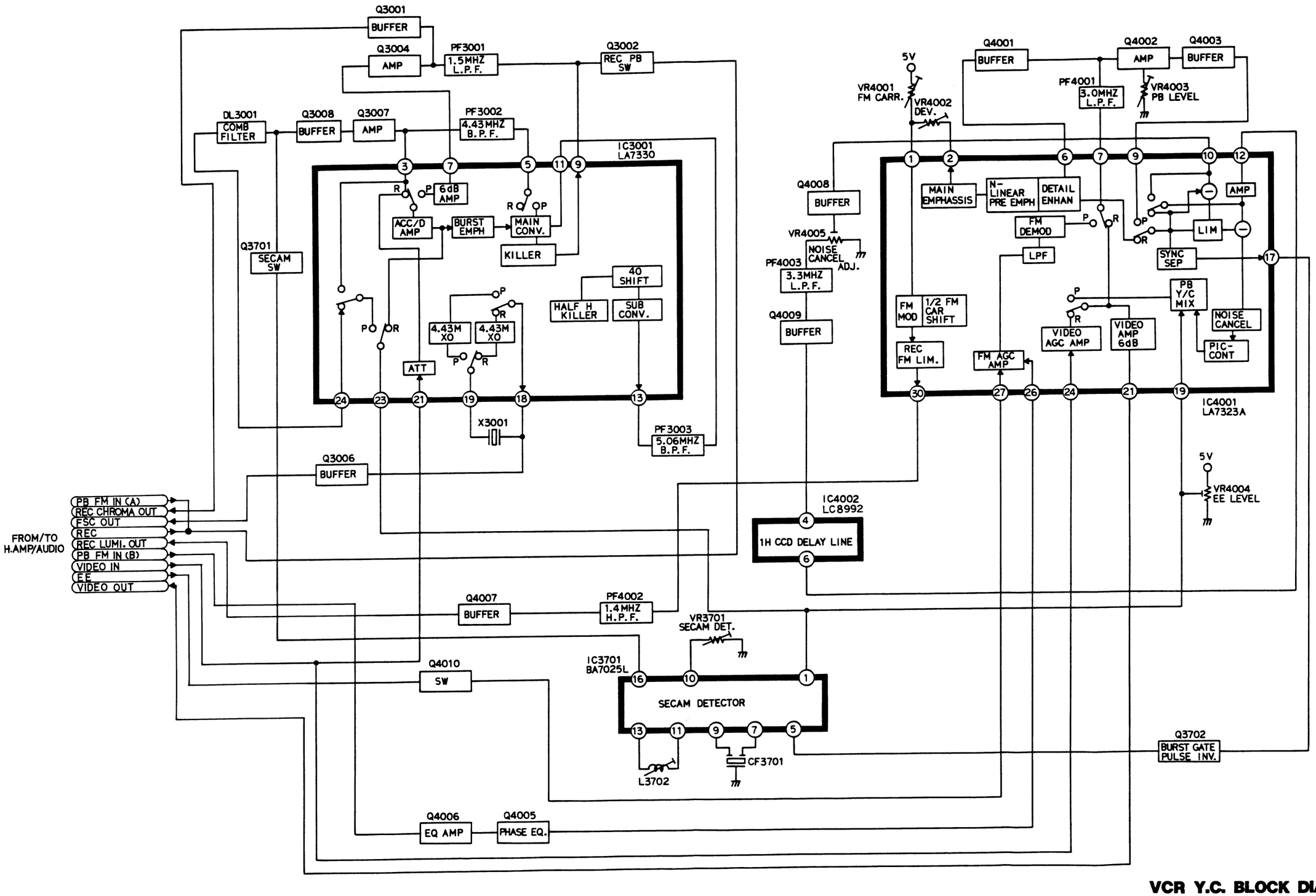
LOW — ALTERNATELY HIGH and LOW

TIMING CHART
1-8266

TIMING CHART



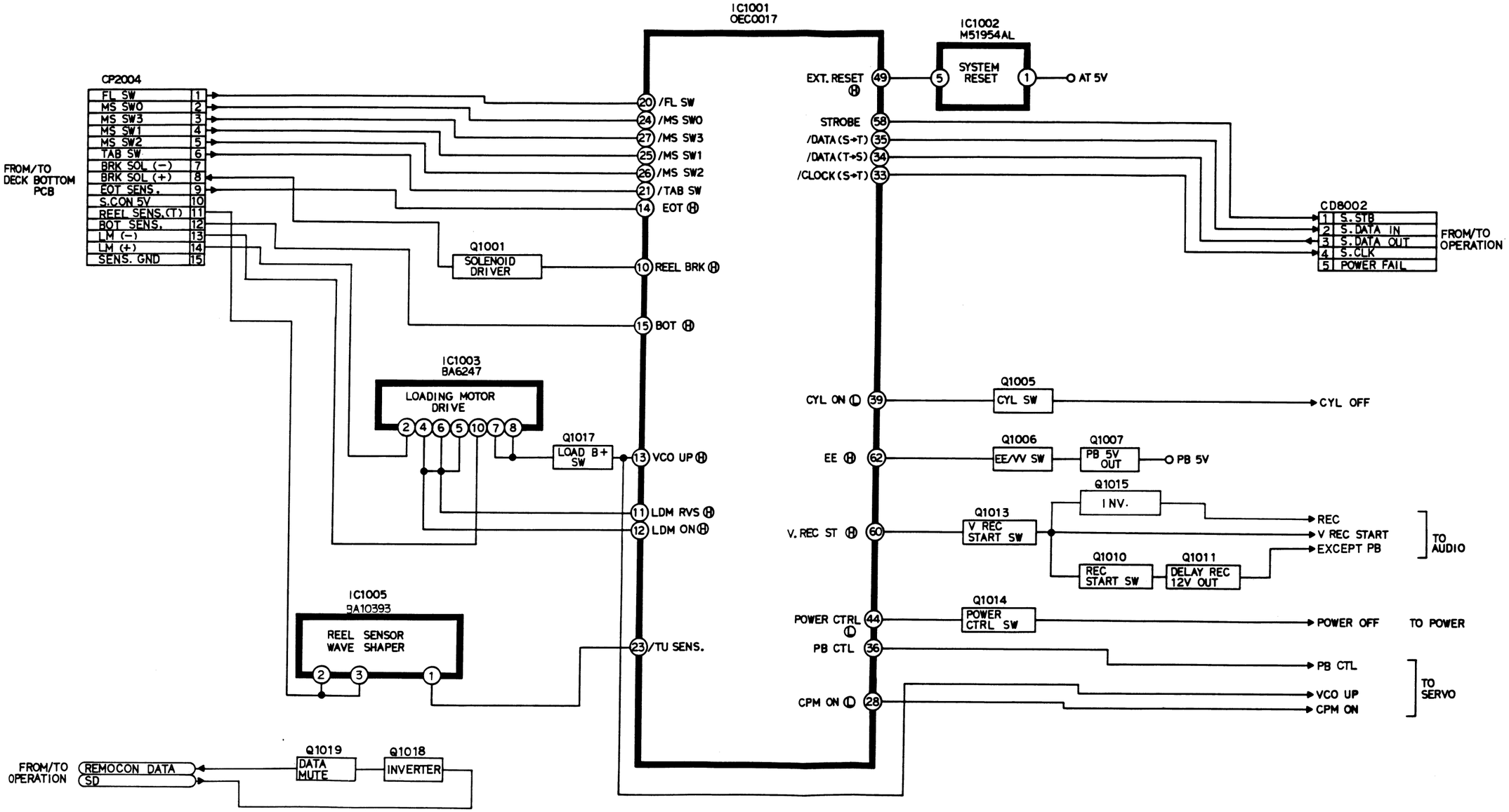
VCR Y.C. BLOCK DIAGRAM



VCR Y.C. BLOCK DIAGRAM

2-3612

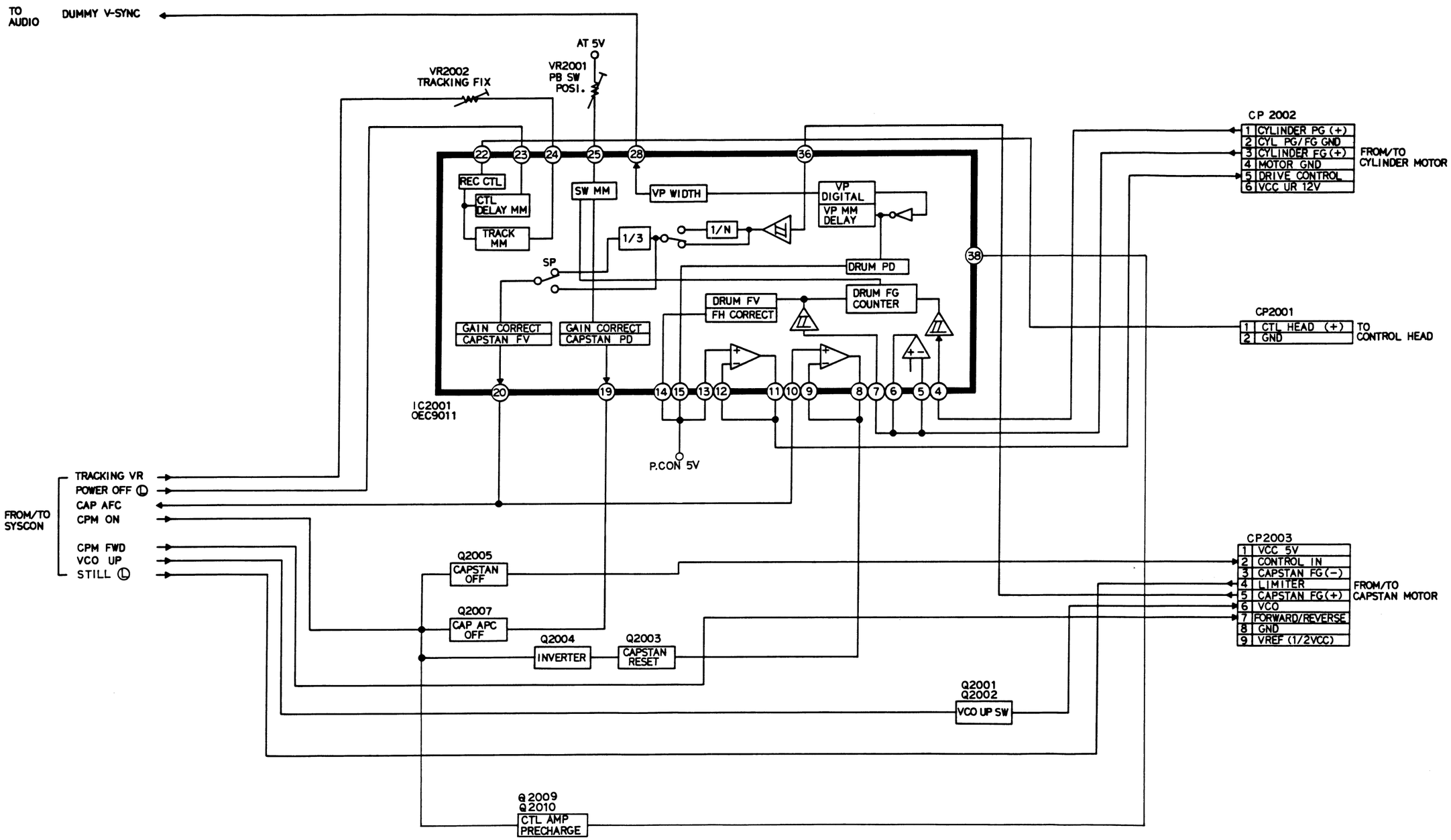
VCR SYSTEM CONTROL BLOCK DIAGRAM



VCR SYSTEM CONTROL BLOCK DIAGRAM

2-3613

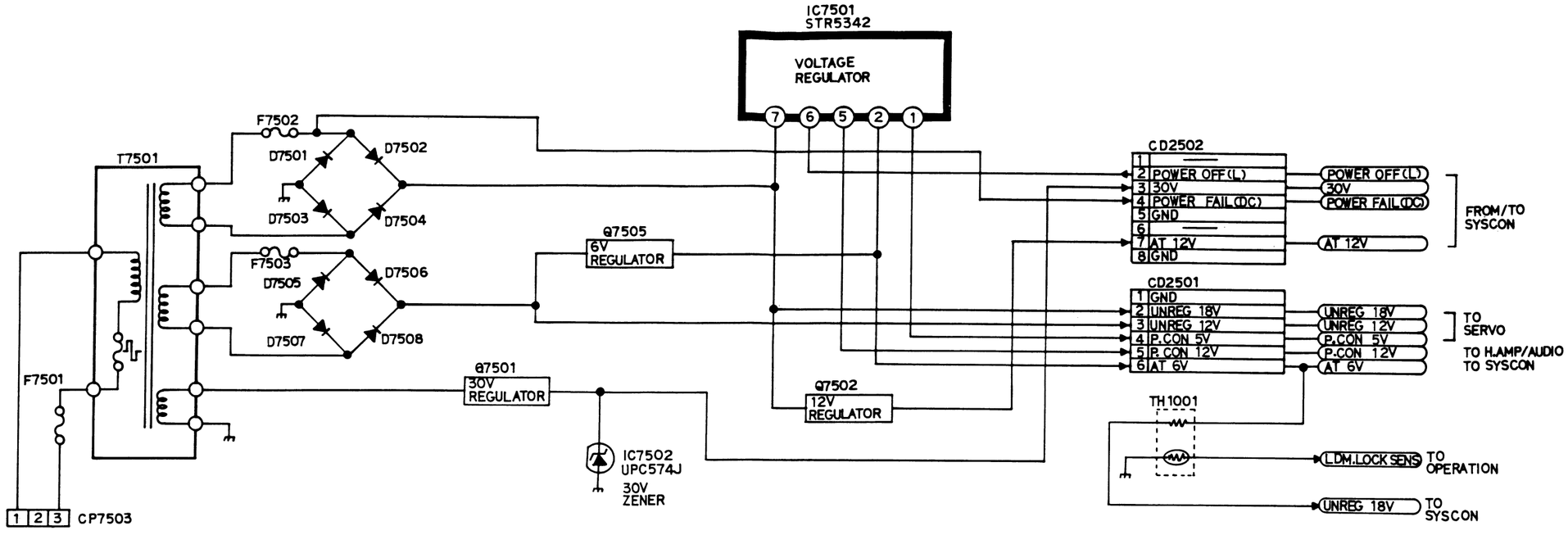
VCR SERVO BLOCK DIAGRAM



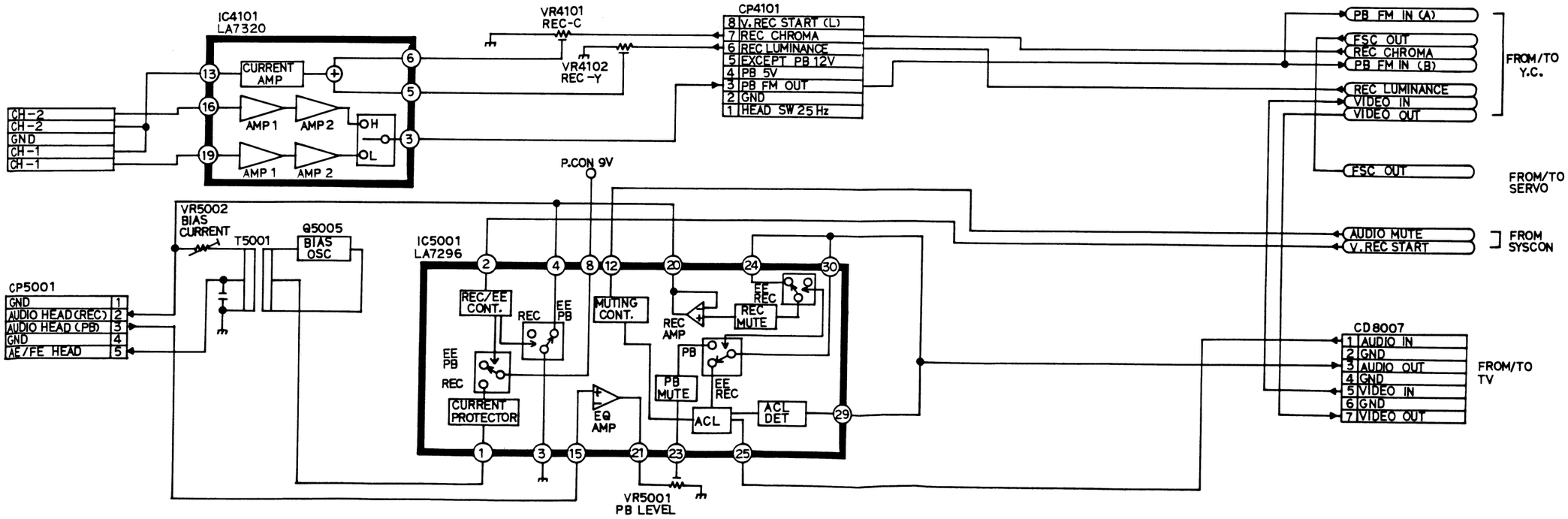
VCR SERVO BLOCK DIAGRAM

2-3614

VCR POWER SUPPLY BLOCK DIAGRAM

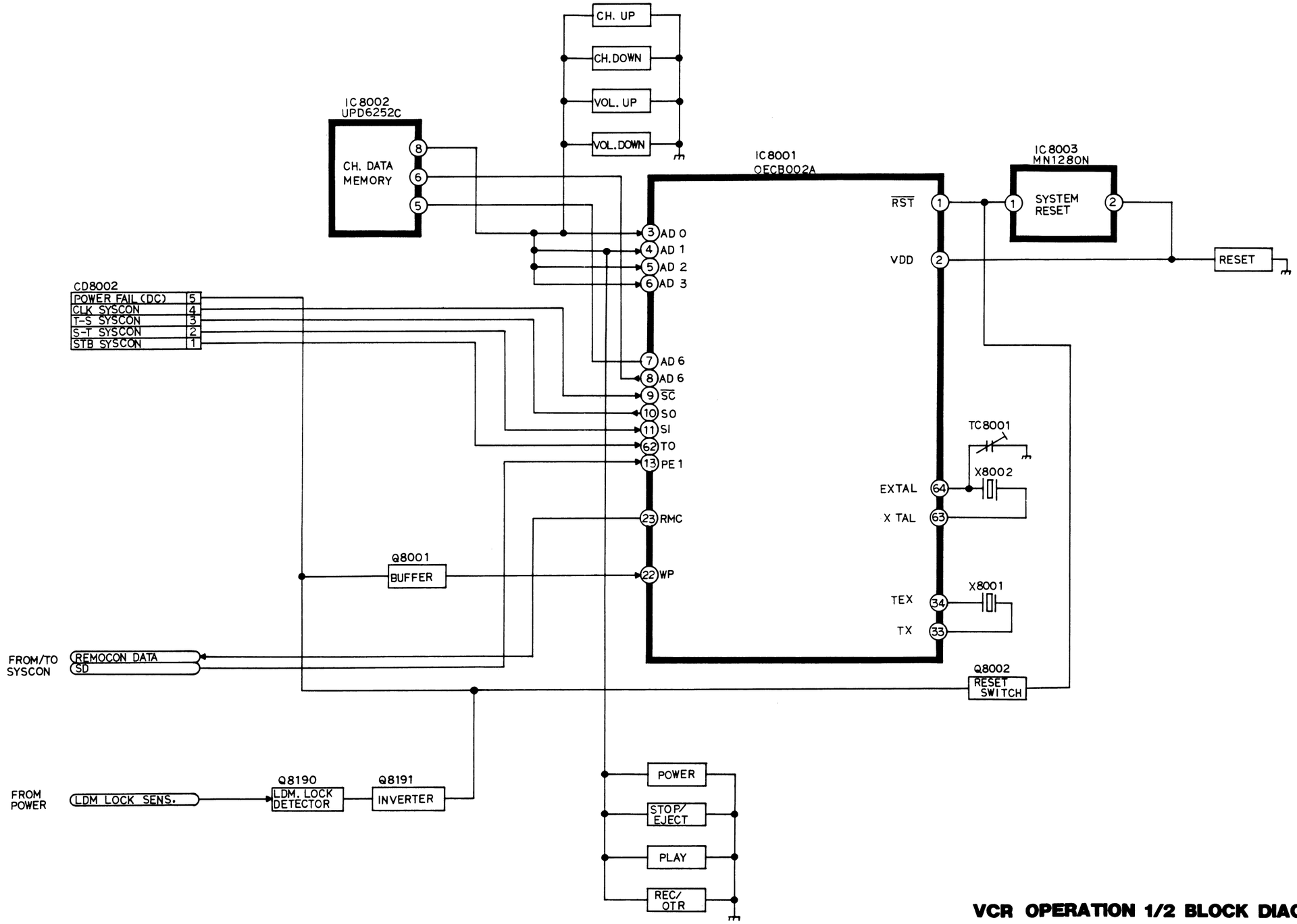


VCR HEAD AMP / AUDIO BLOCK DIAGRAM



2-3616

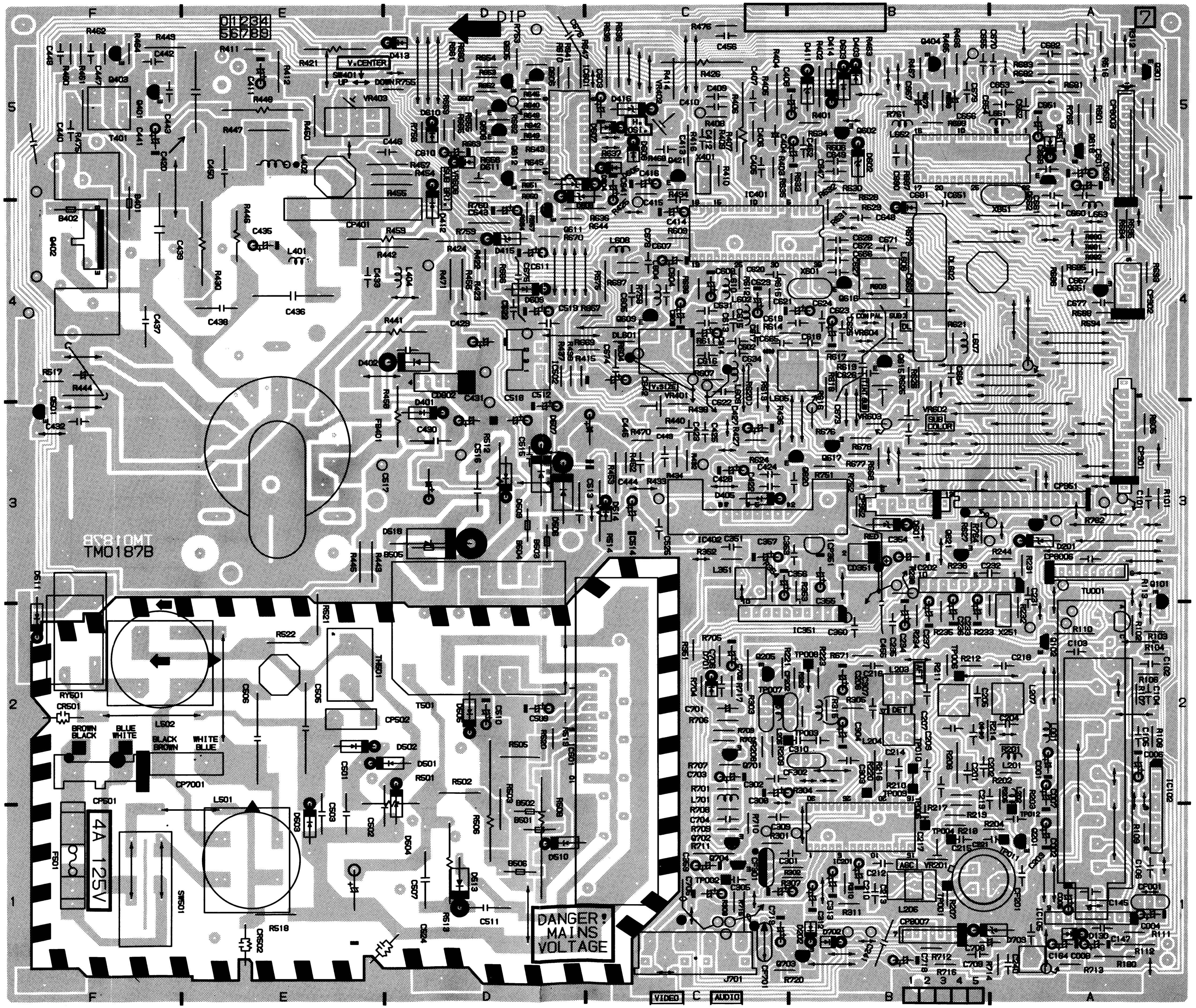
VCR OPERATION 1/2 BLOCK DIAGRAM



VCR OPERATION 1/2 BLOCK DIAGRAM

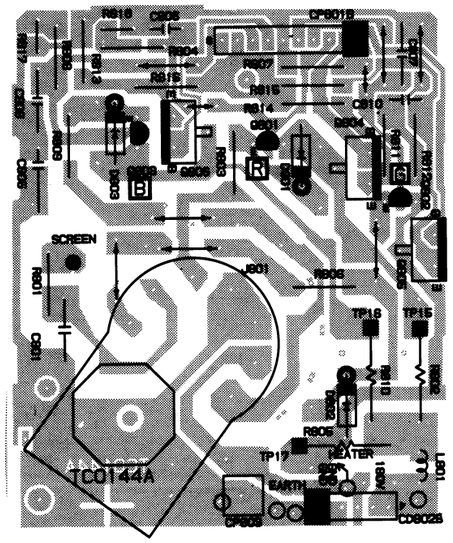
2-3615

TV P. C. BOARD
MAIN

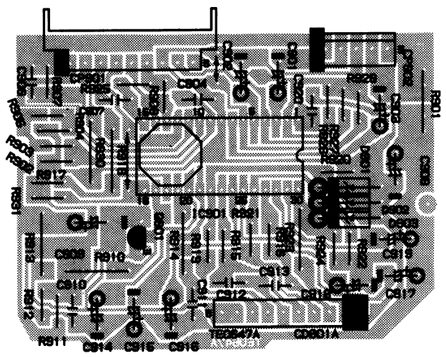


TV P. C. BOARD

CRT

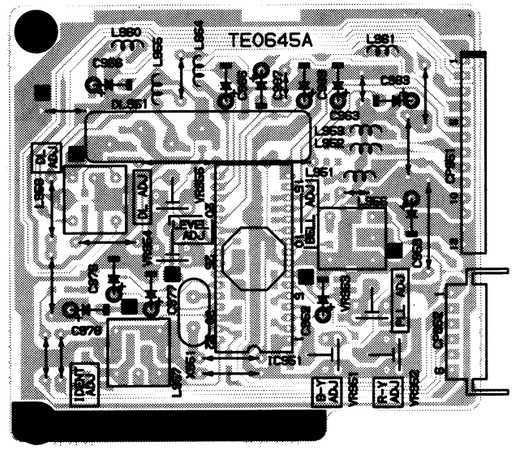


AKB

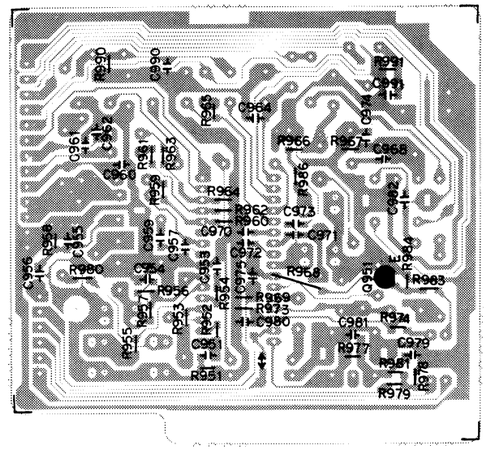


SECAM

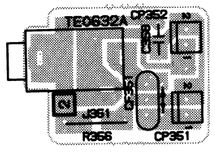
SOLDER SIDE



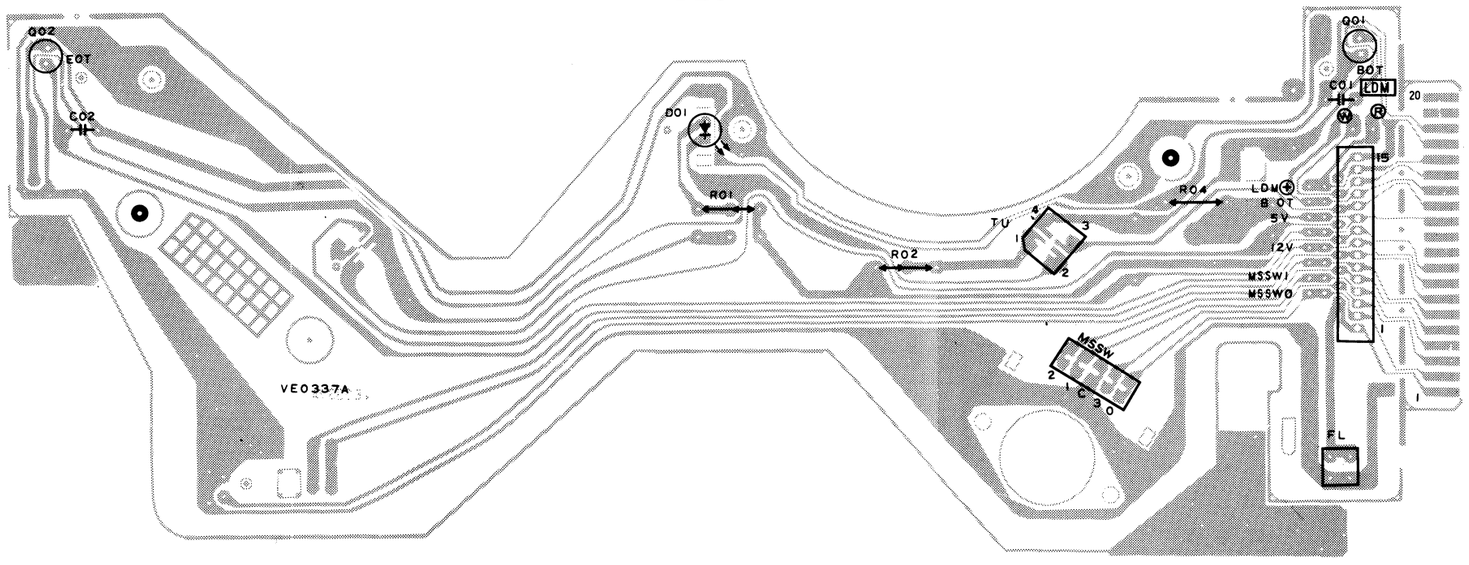
COMPONENT SIDE



EARPHONE



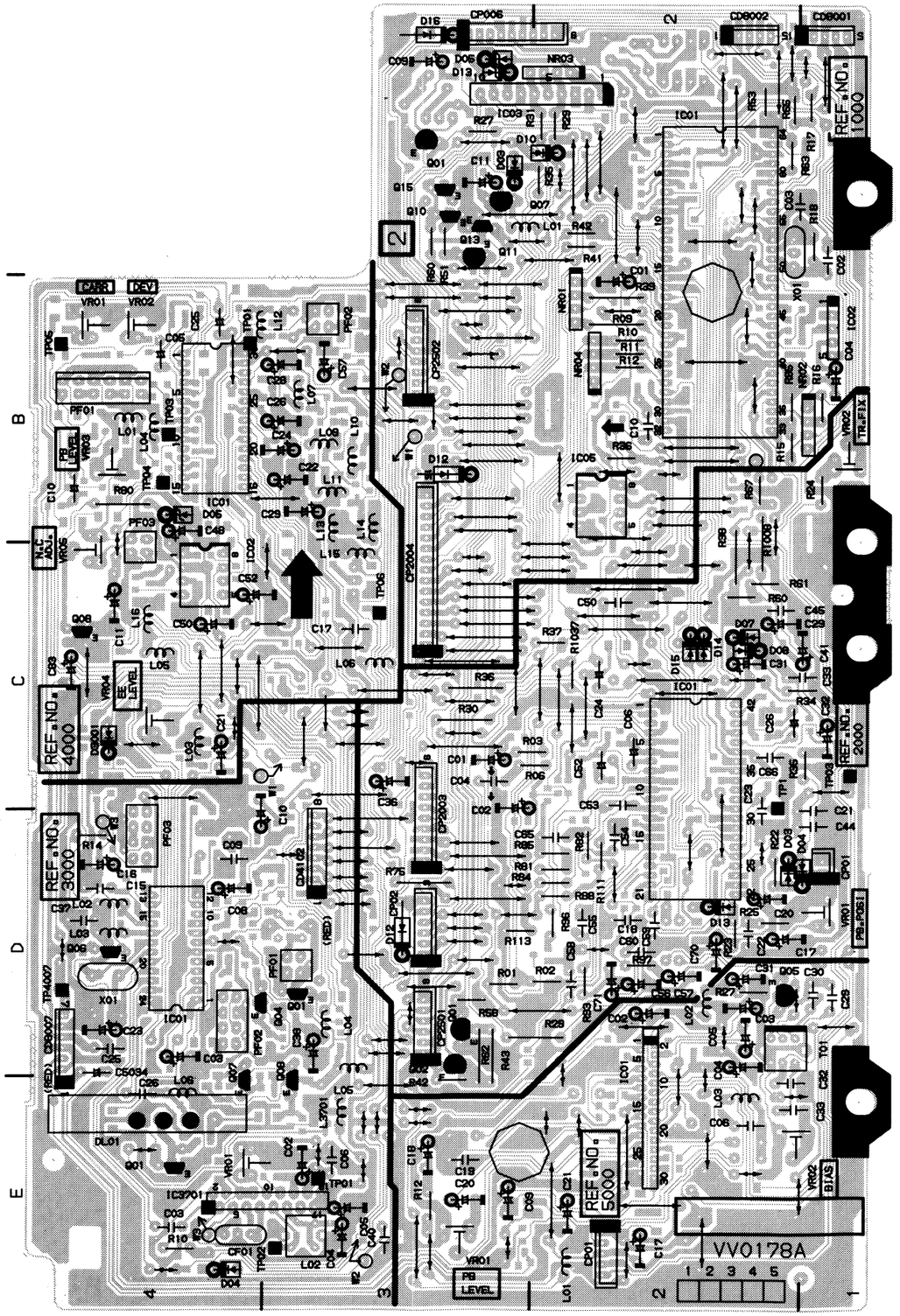
DECK



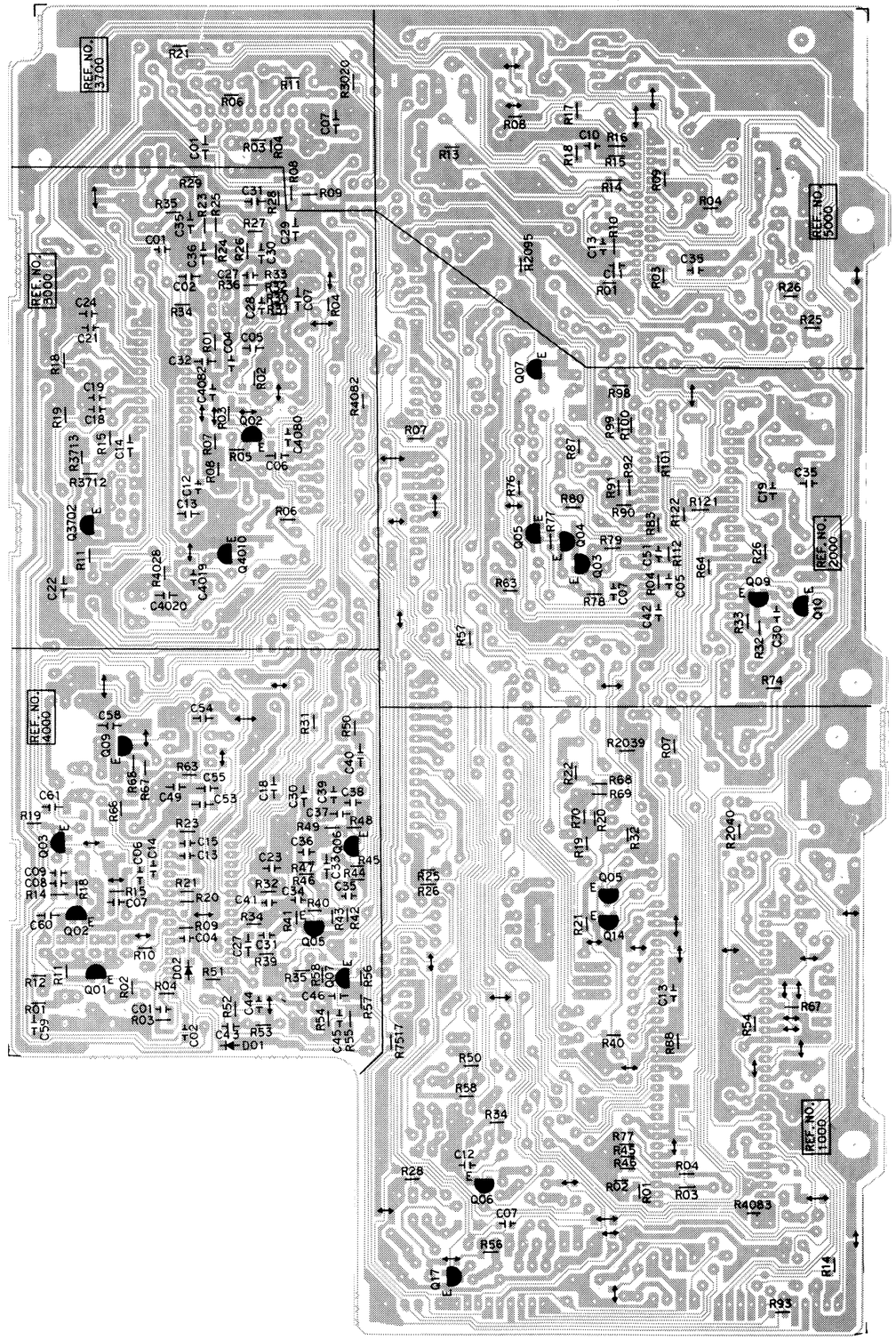
VCR P. C. BOARD

MAIN

COMPONENT SIDE

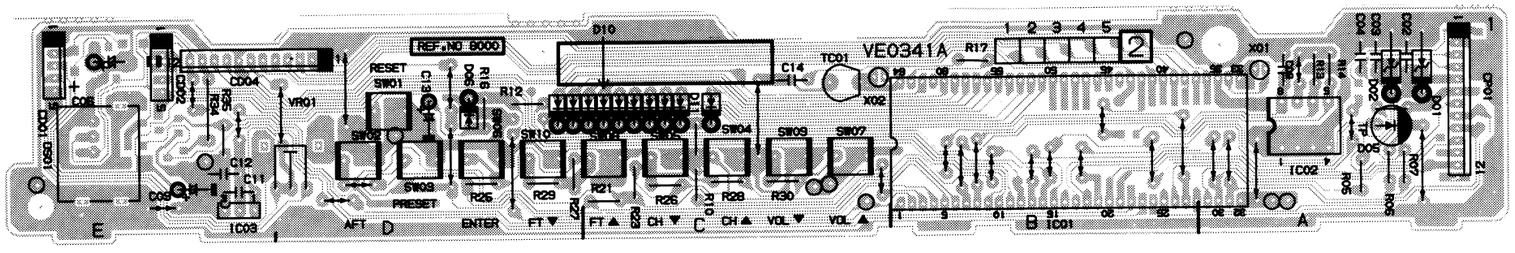


SOLDER SIDE

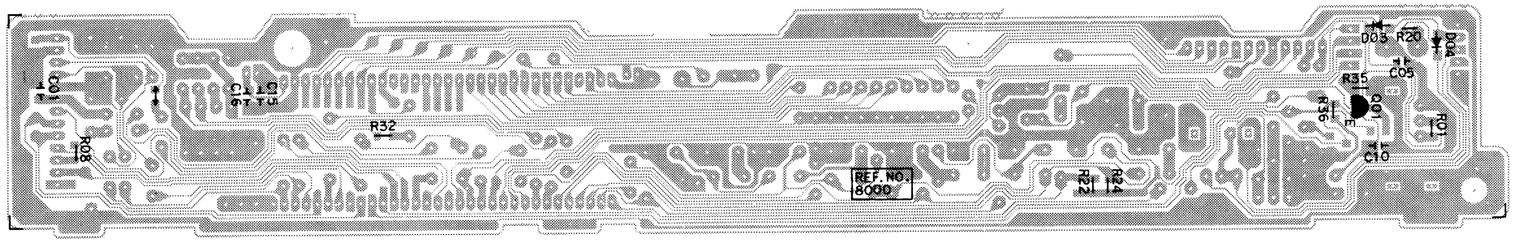


OPERATION 1

COMPONENT SIDE

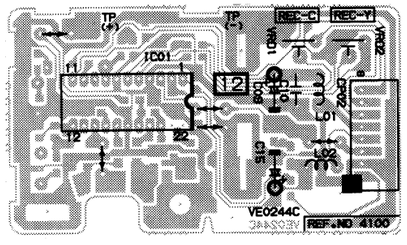


SOLDER SIDE

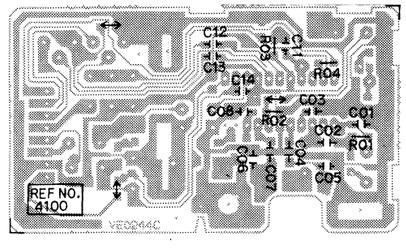


HEAD AMP

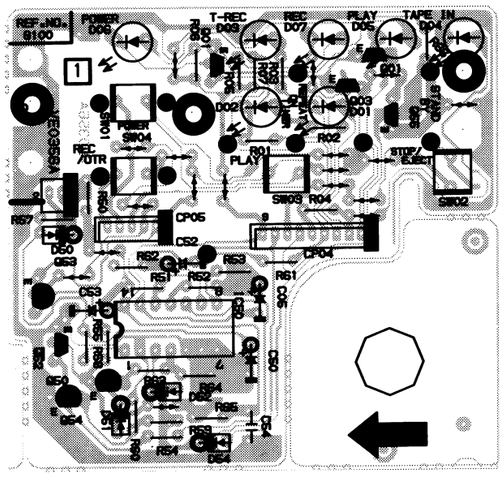
COMPONENT SIDE



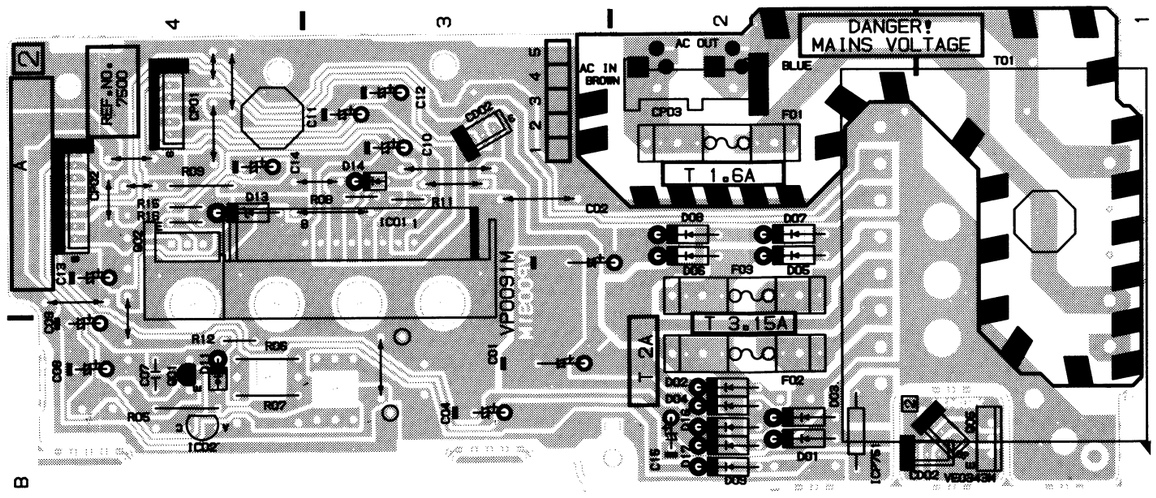
SOLDER SIDE



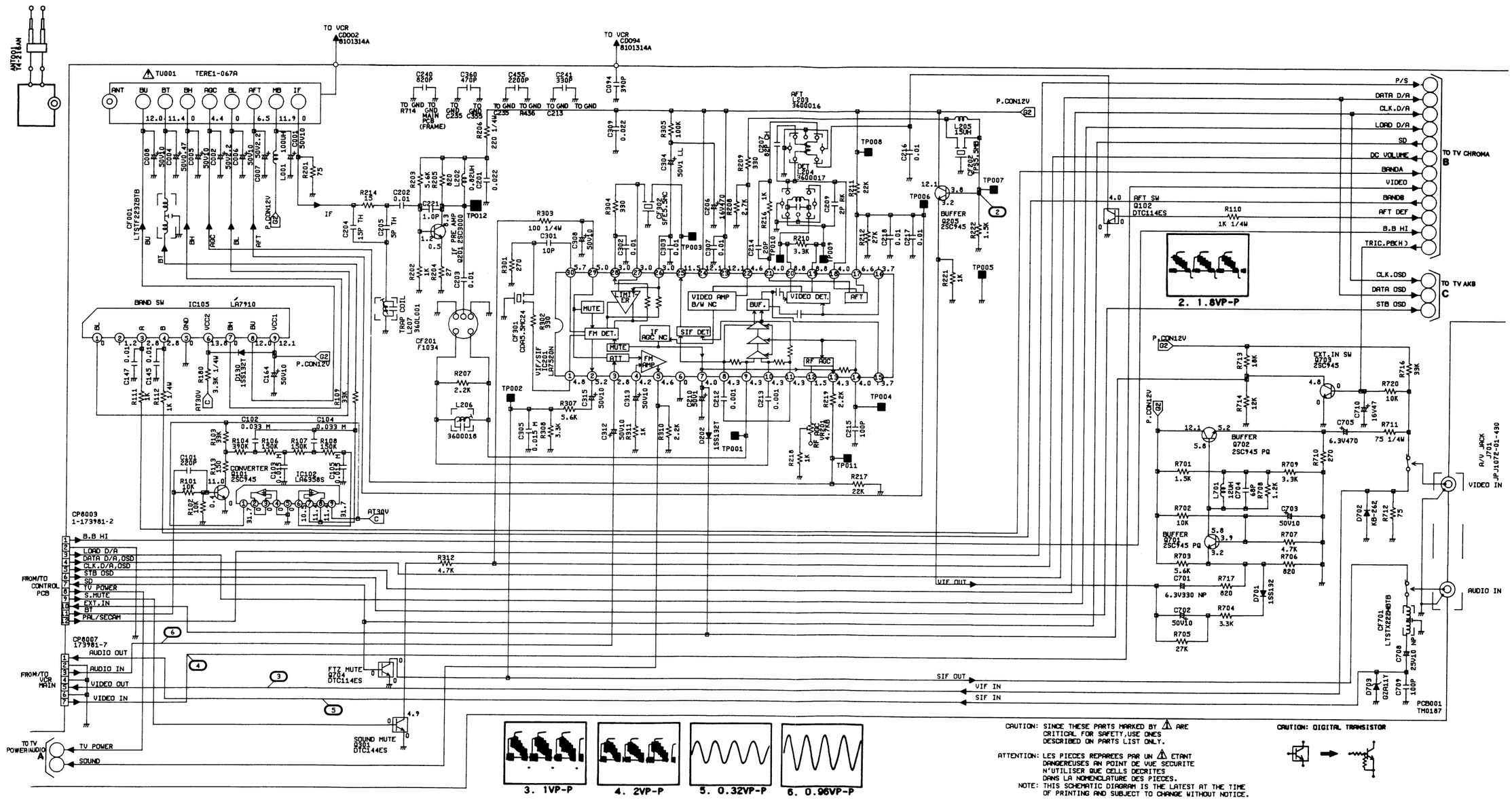
OPERATION 2



POWER SUPPLY/TRANSISTOR



TV IF SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

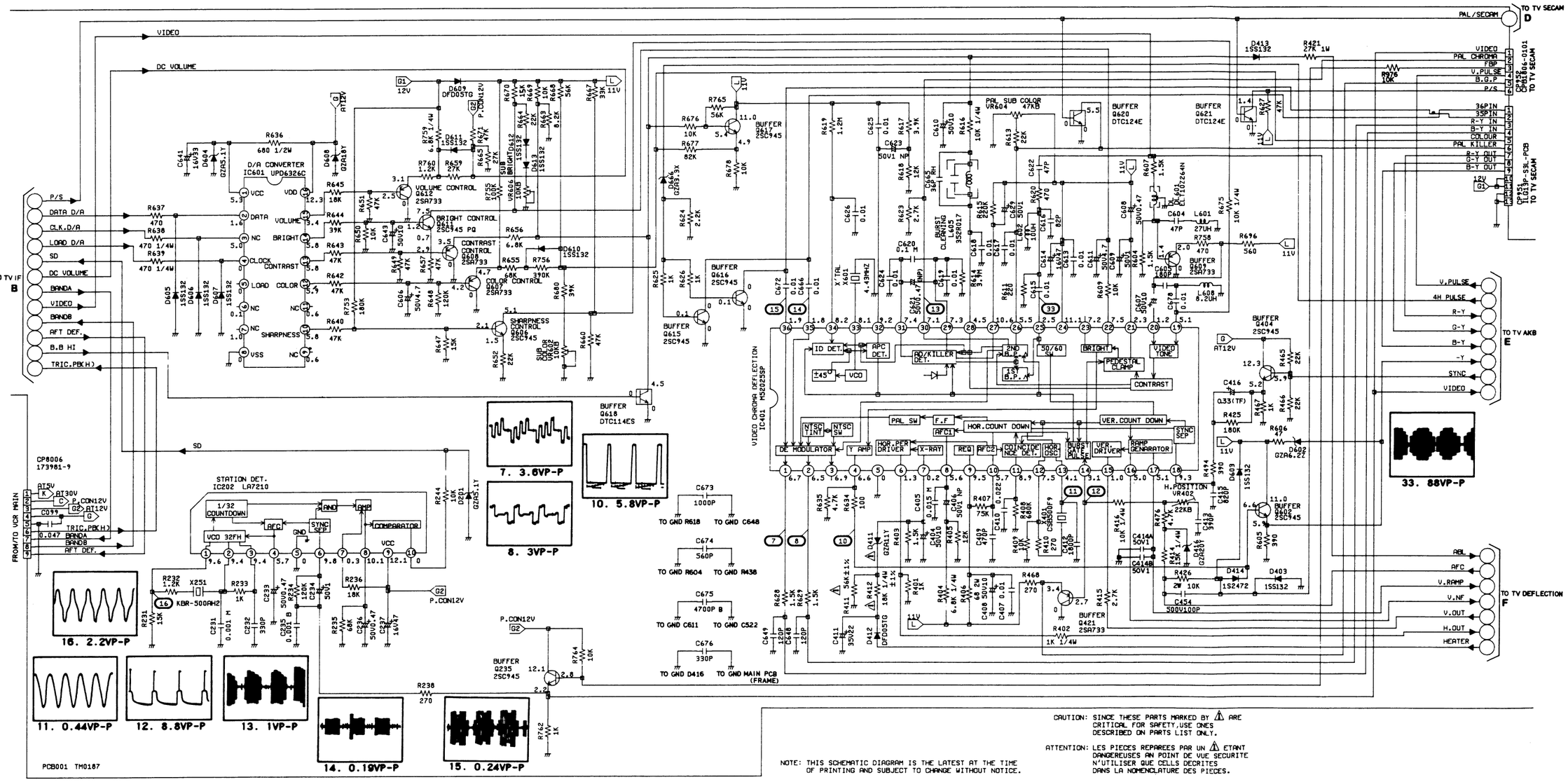
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR

TV IF SCHEMATIC DIAGRAM

1-9098

TV CHROMA SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

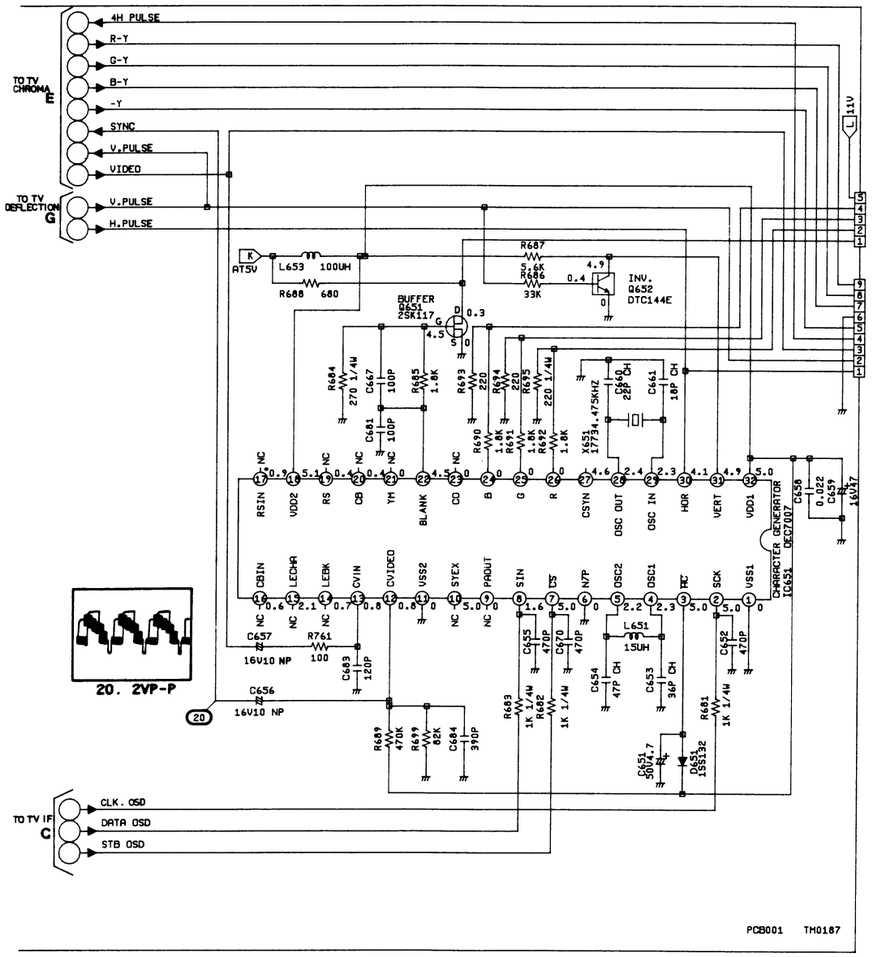
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

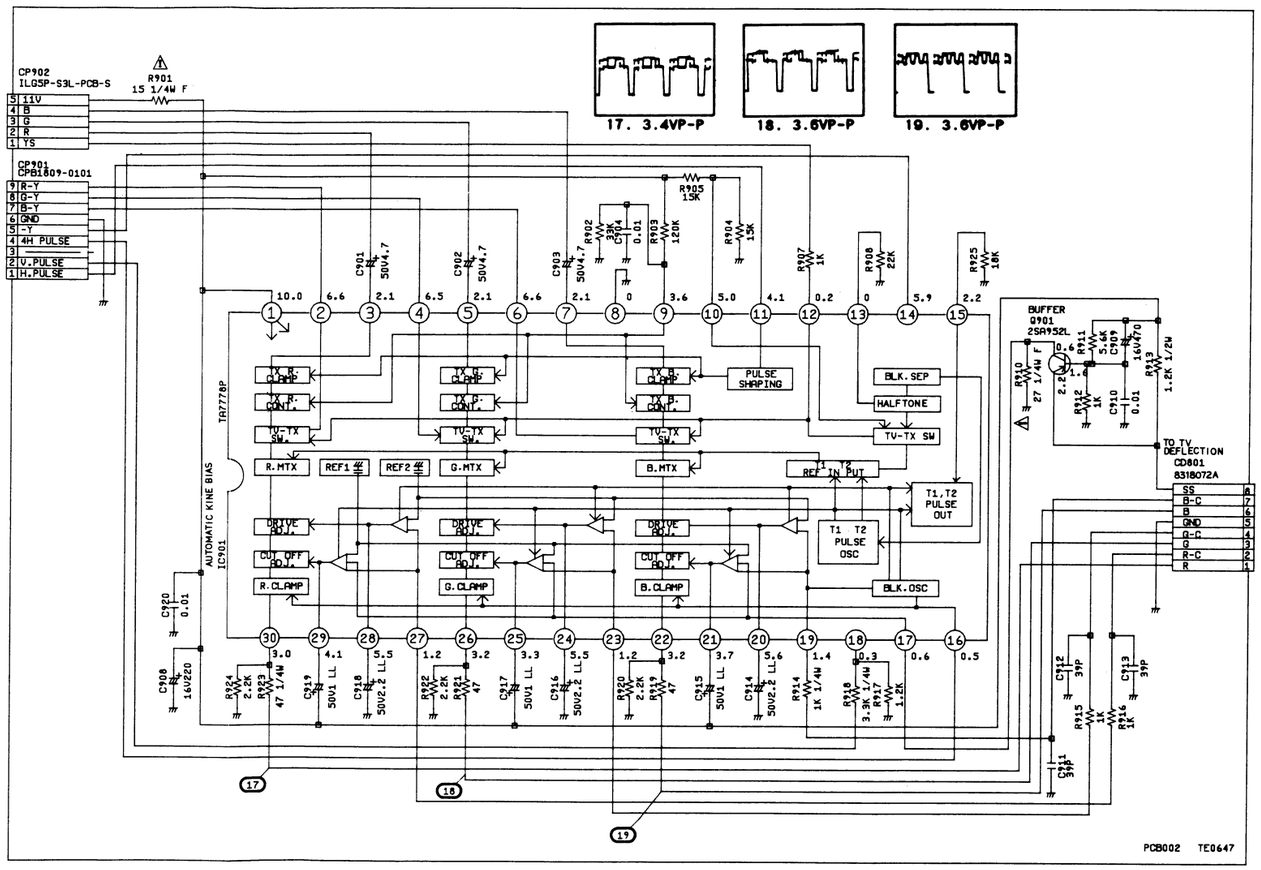
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

TV CHROMA SCHEMATIC DIAGRAM

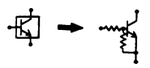
1-9099

TV AKB SCHEMATIC DIAGRAM





CAUTION: DIGITAL TRANSISTOR



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

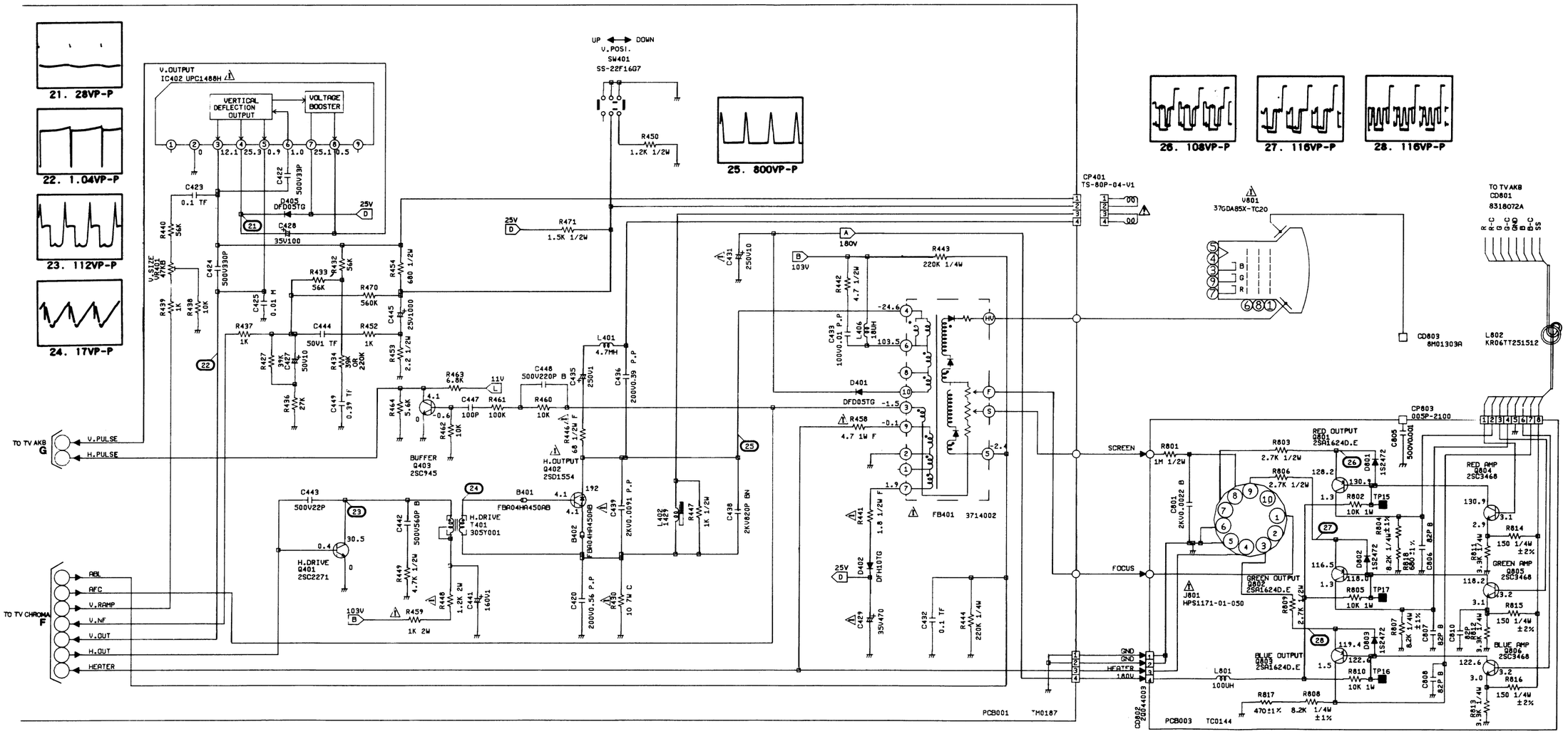
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER AUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

TV AKB SCHEMATIC DIAGRAM

1-9100

TV DEFLECTION SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

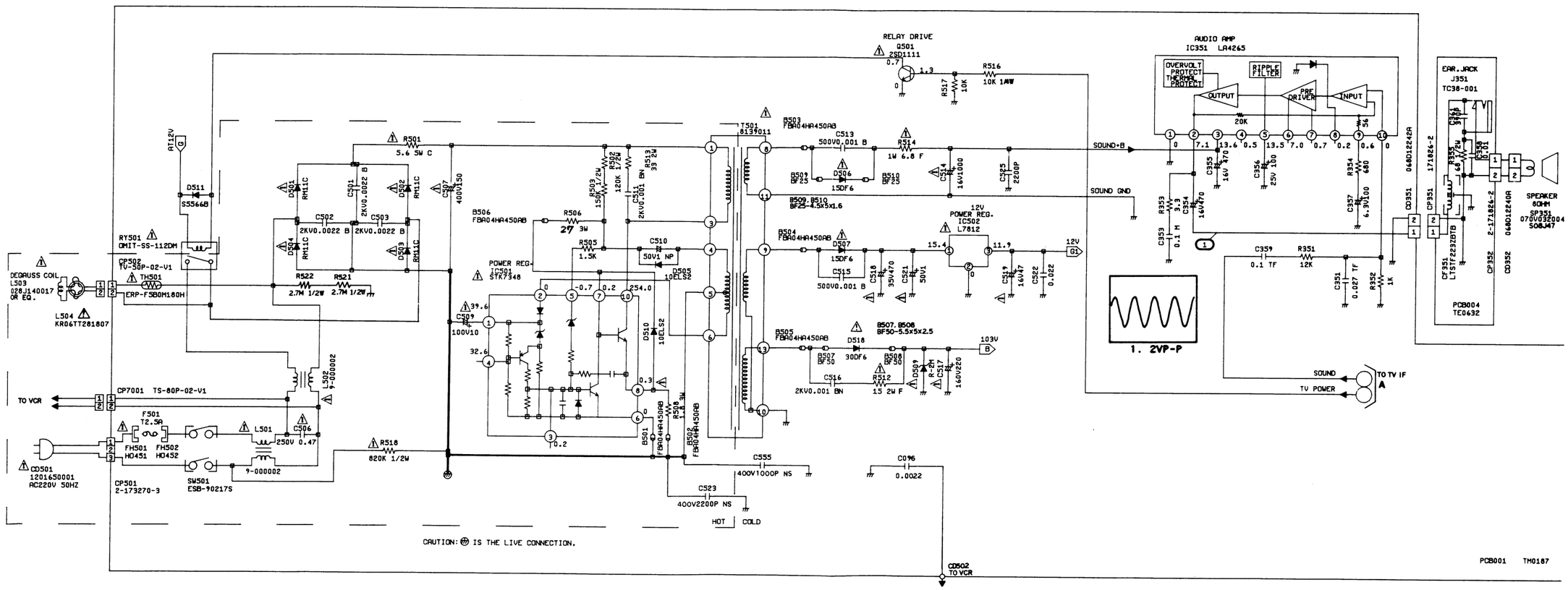
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

TV DEFLECTION SCHEMATIC DIAGRAM

1-9101

TV POWER/AUDIO SCHEMATIC DIAGRAM



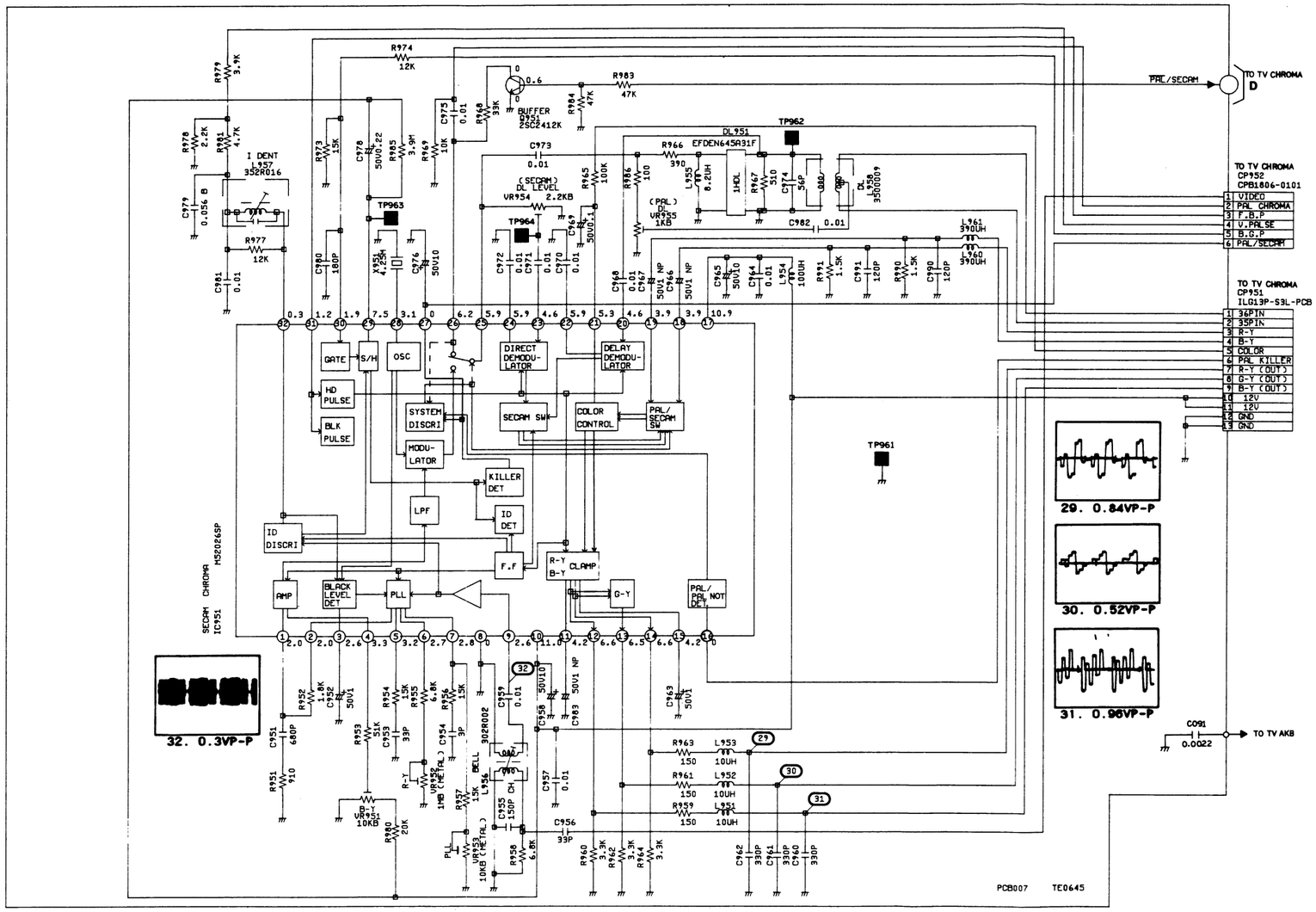
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

TV POWER/AUDIO SCHEMATIC DIAGRAM
1-9102

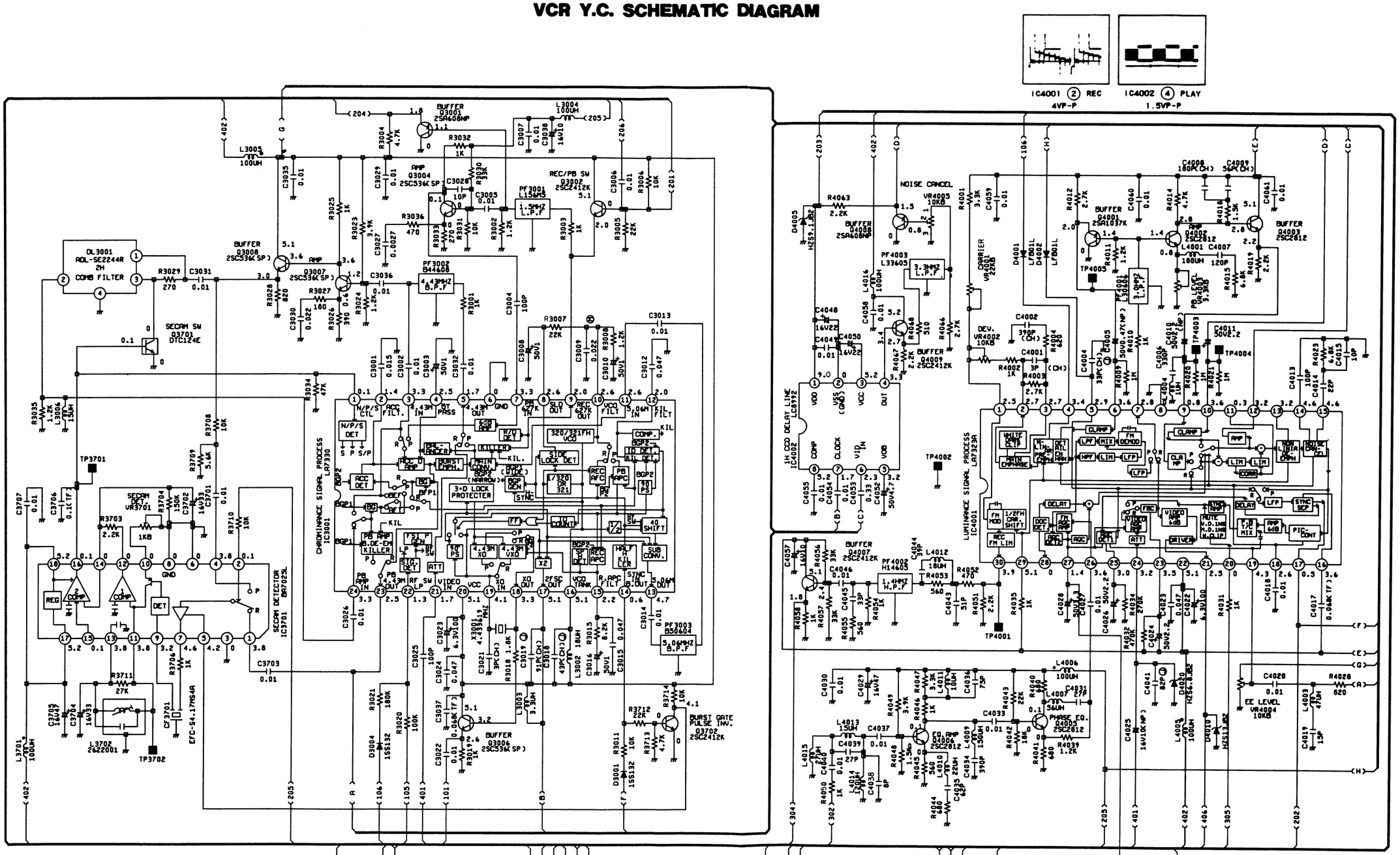
TV SECAM SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

TV SECAM SCHEMATIC DIAGRAM
1-9103

VCR Y.C. SCHEMATIC DIAGRAM

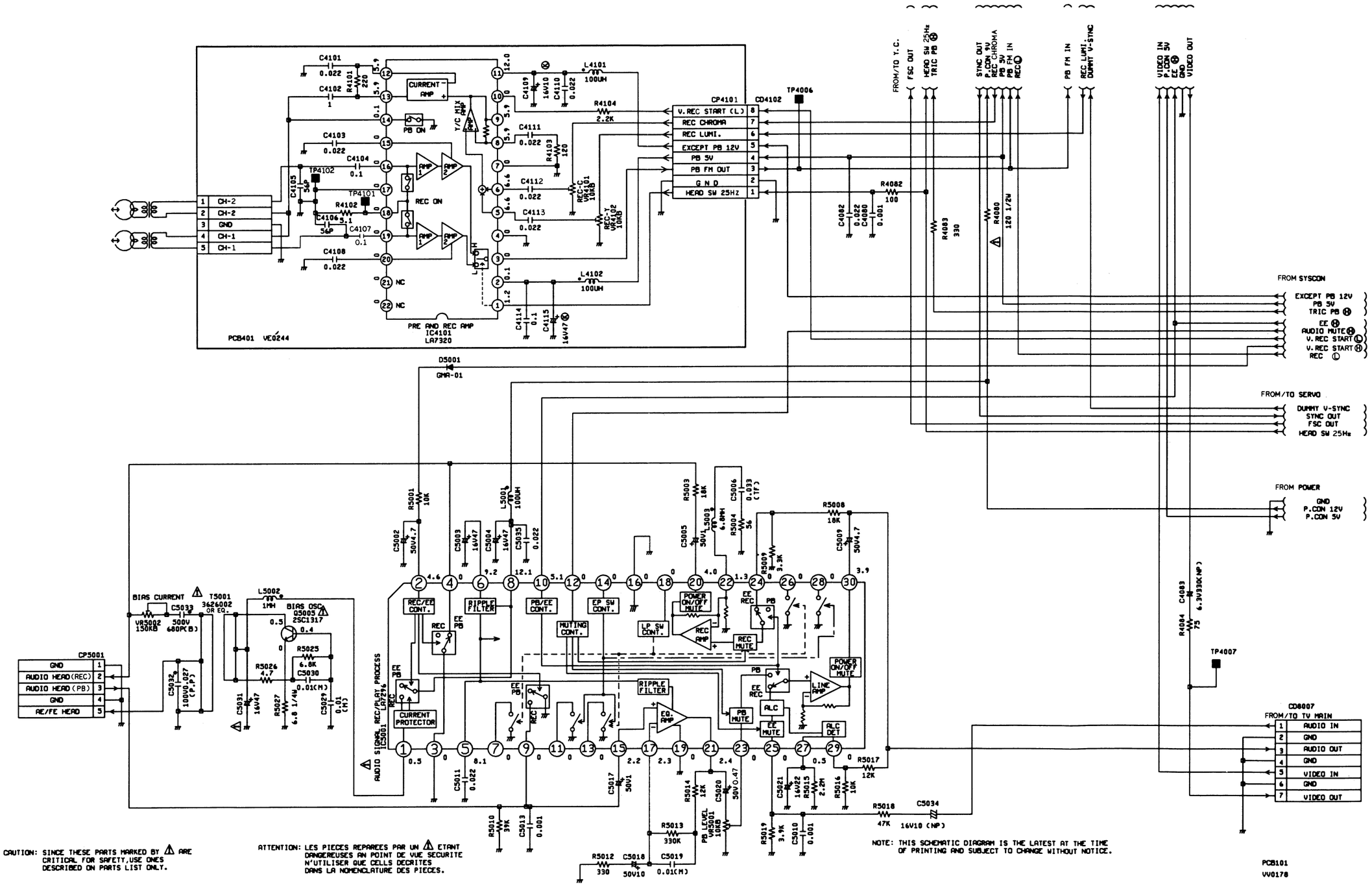


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR Y.C. SCHEMATIC DIAGRAM

1-9091

VCR HEAD AMP/AUDIO SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

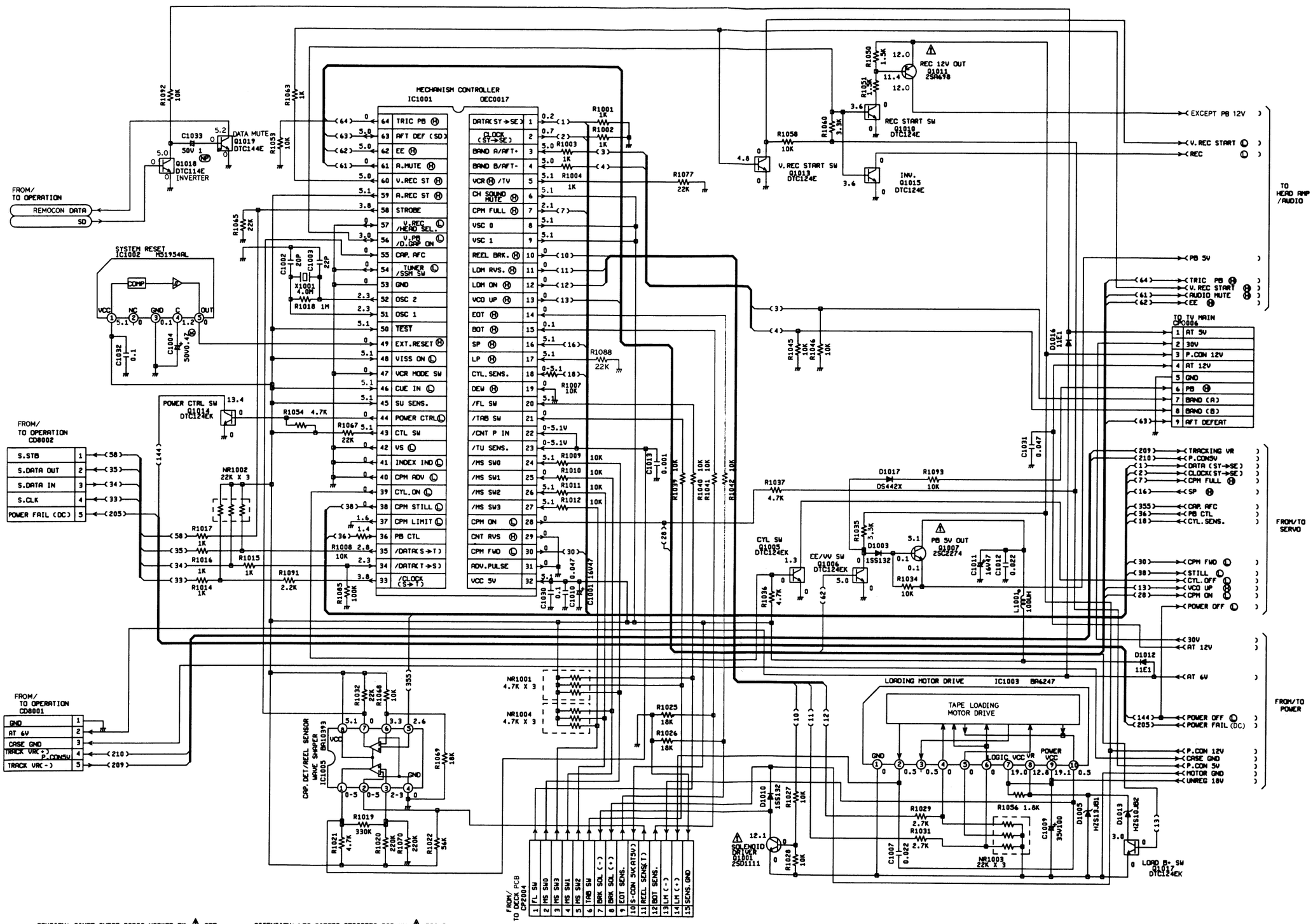
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR HEAD AMP/AUDIO SCHEMATIC DIAGRAM

1-9096

VCR SYSTEM CONTROL SCHEMATIC DIAGRAM



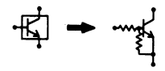
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB101
VV0178

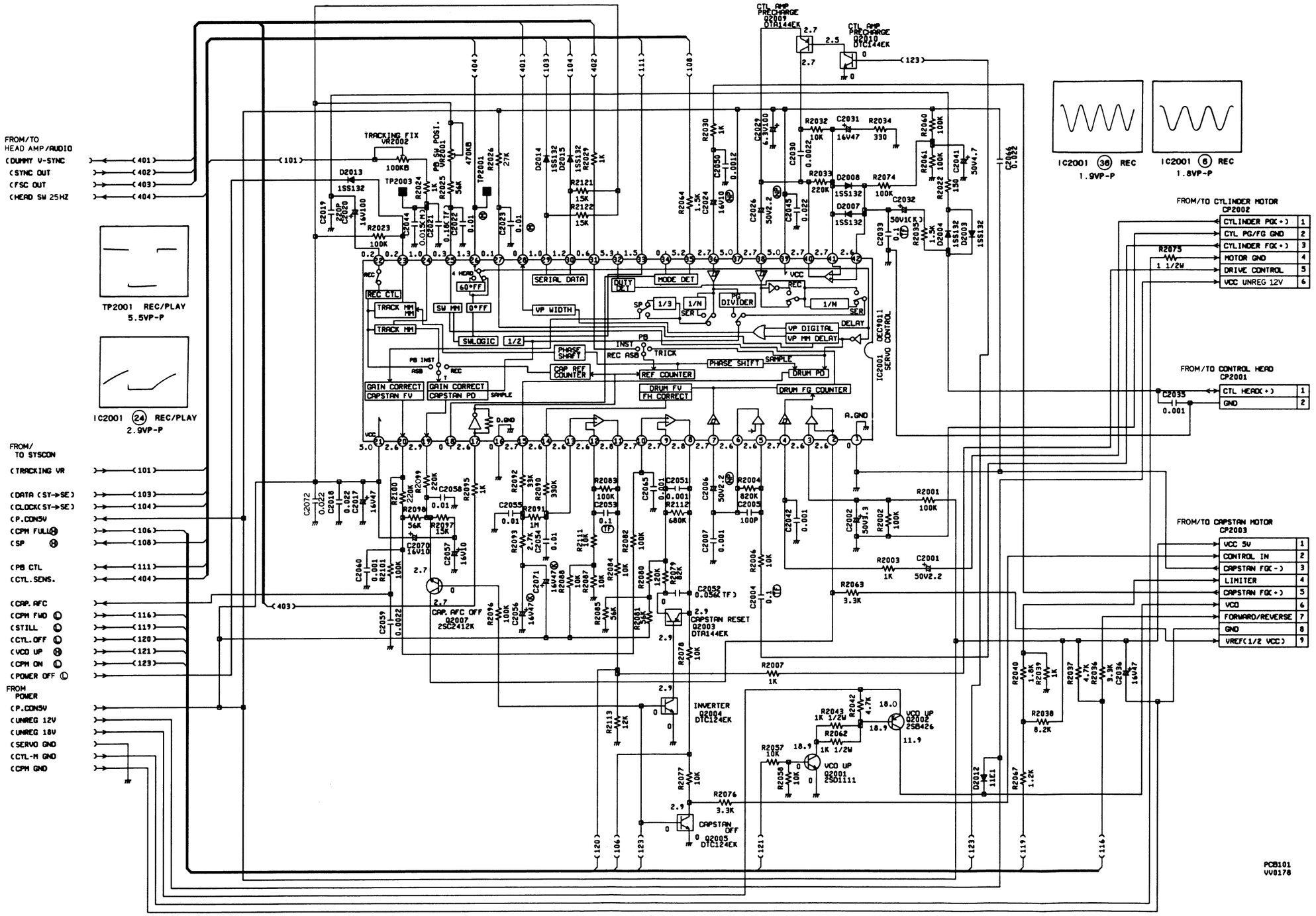
CAUTION: DIGITAL TRANSISTOR



VCR SYSTEM CONTROL SCHEMATIC DIAGRAM

1-9092

VCR SERVO SCHEMATIC DIAGRAM

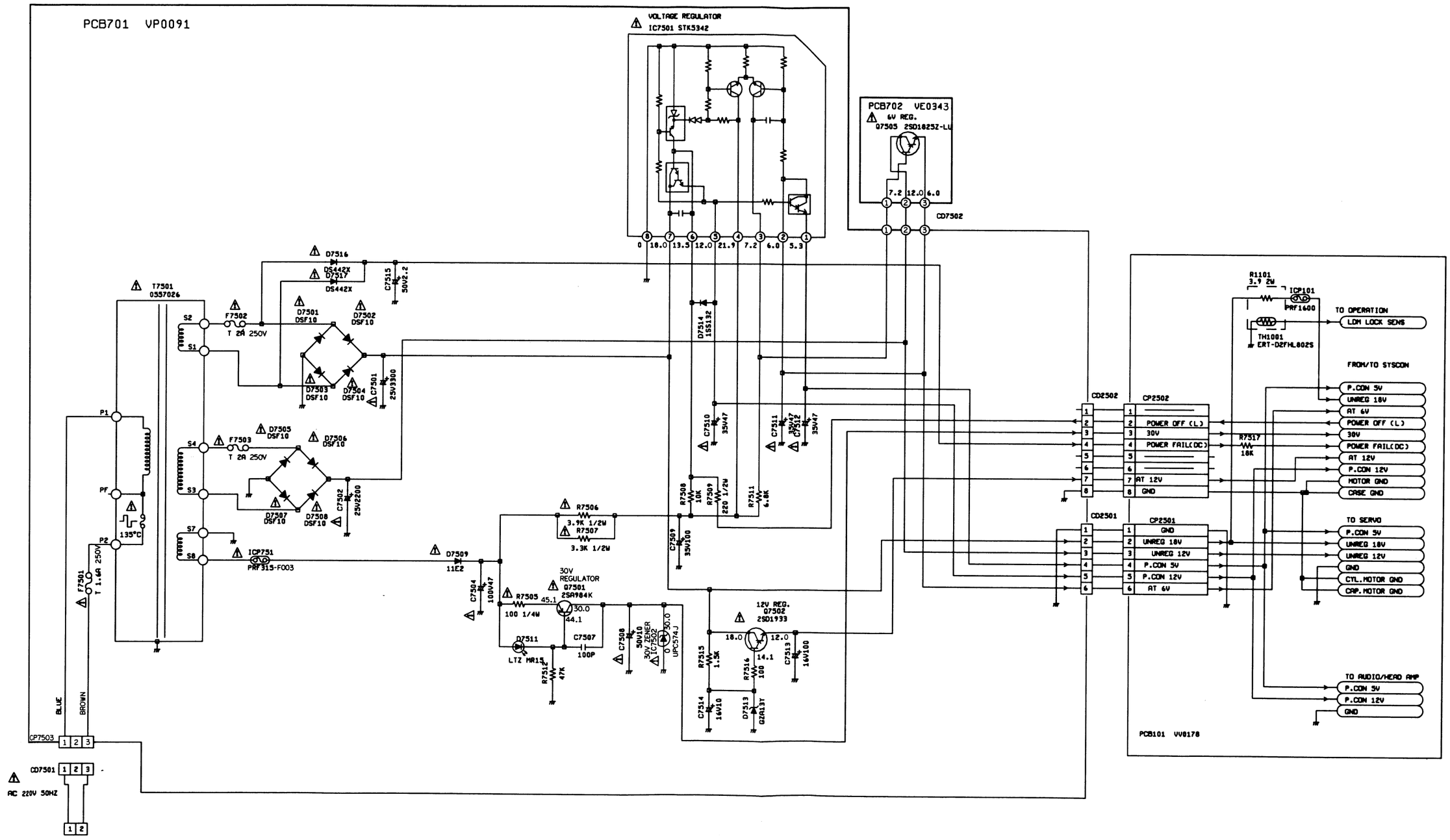


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR SERVO SCHEMATIC DIAGRAM

1-9093

VCR POWER SUPPLY SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

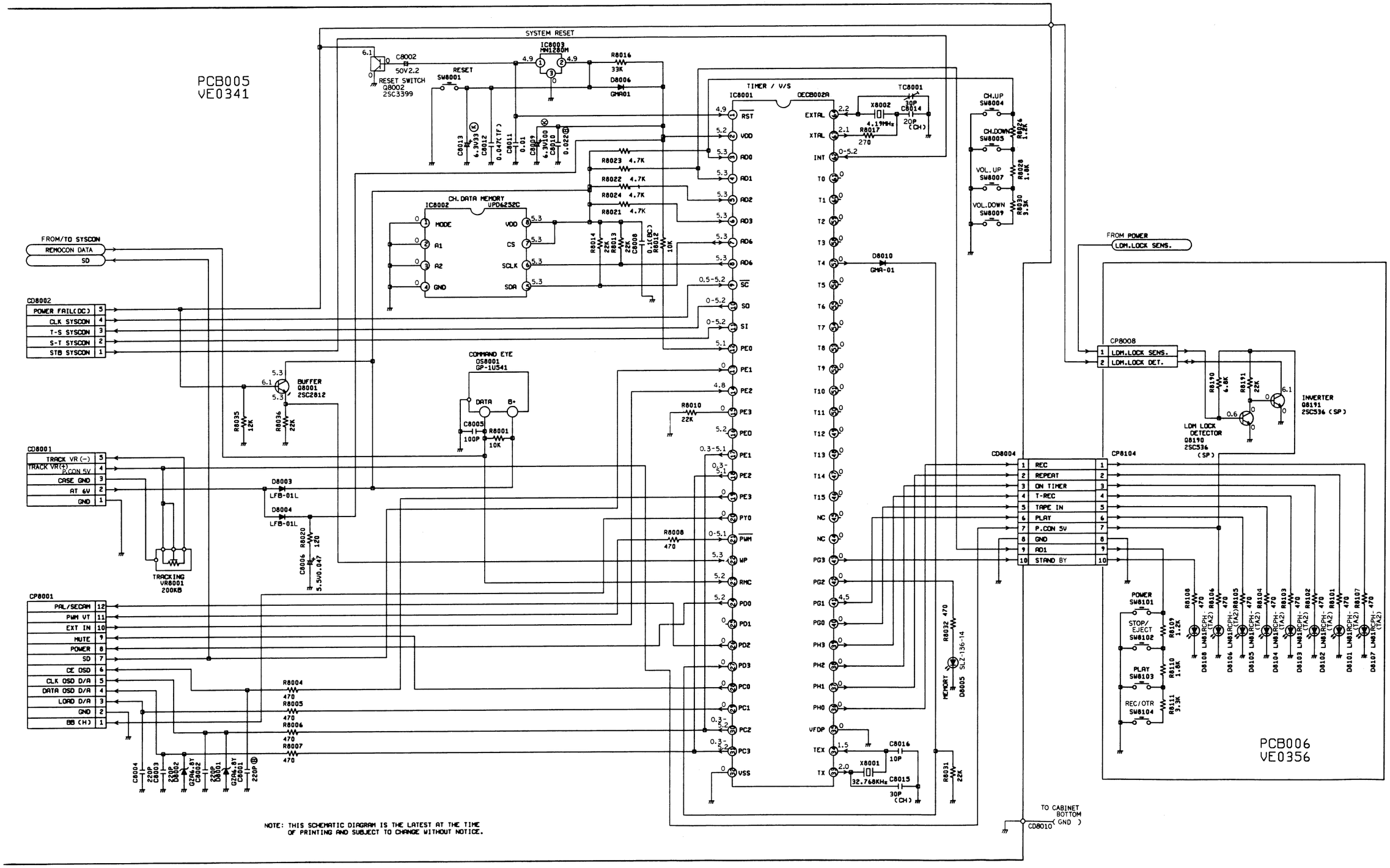
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR POWER SUPPLY SCHEMATIC DIAGRAM

1-9094

VCR OPERATION 1/2 SCHEMATIC DIAGRAM

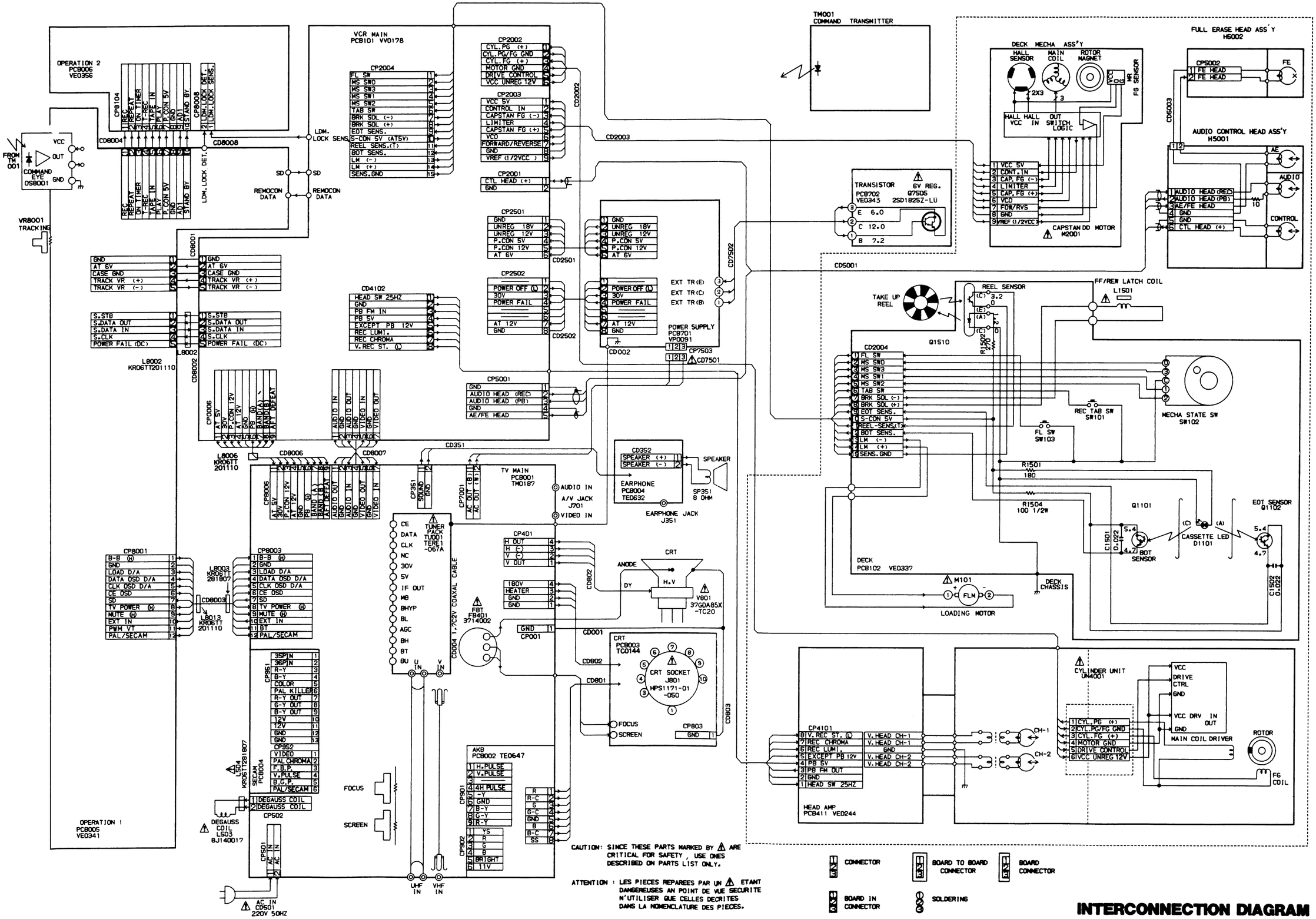


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR OPERATION 1/2 SCHEMATIC DIAGRAM

1-9095

INTERCONNECTION DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

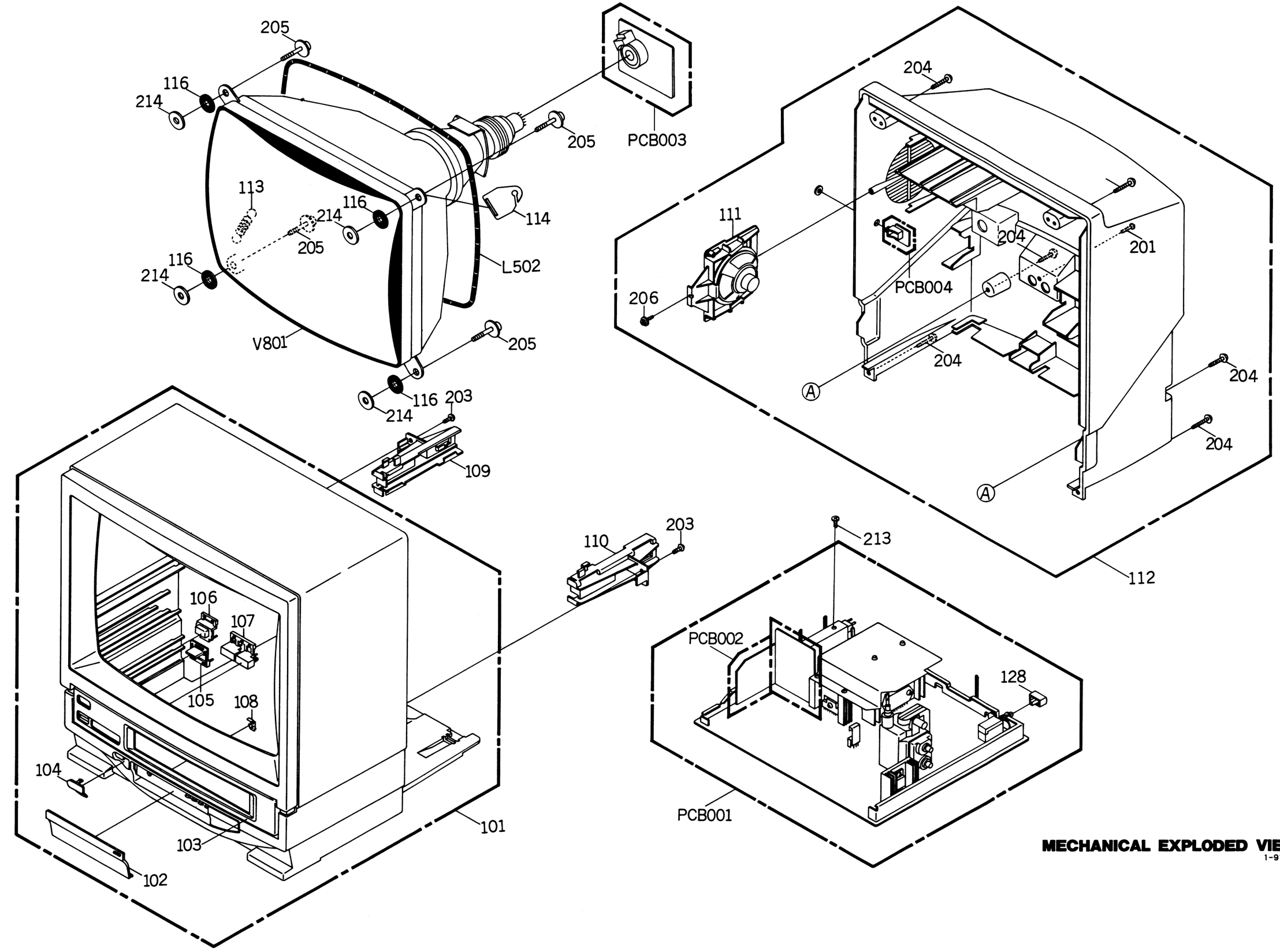
ATTENTION : LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

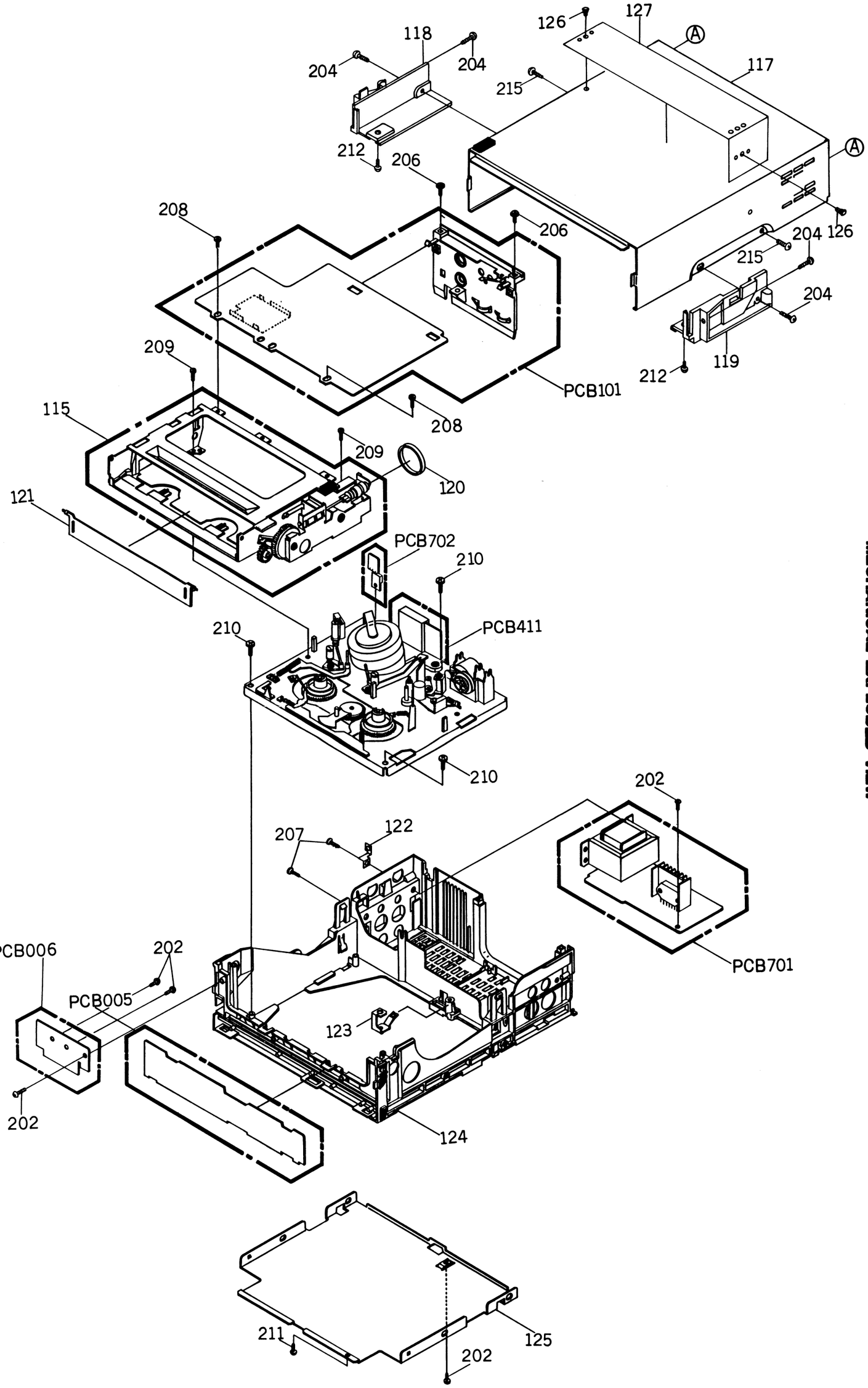
INTERCONNECTION DIAGRAM

1-9090

MECHANICAL EXPLODED VIEW



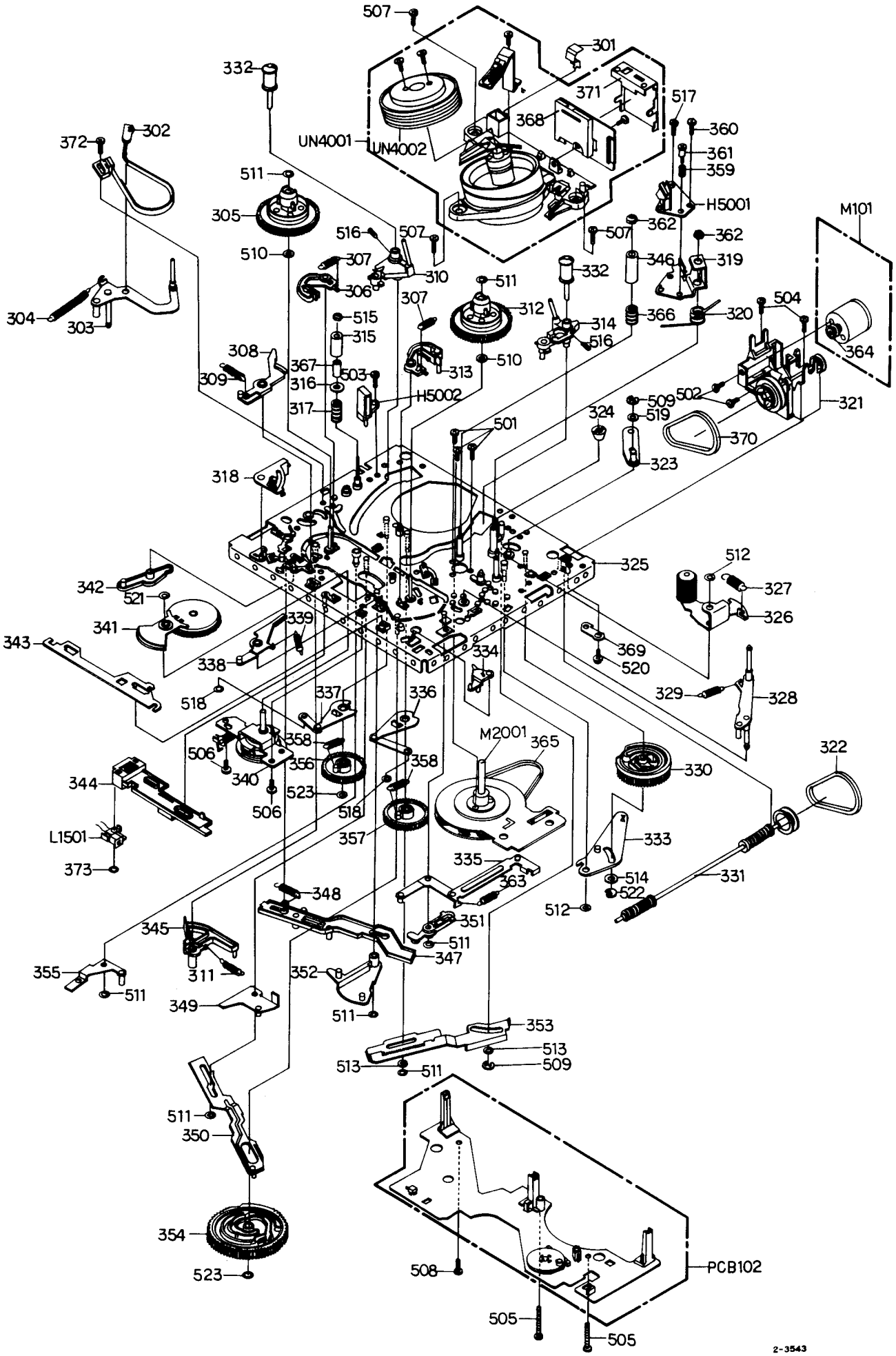
MECHANICAL EXPLODED VIEW
1-9104



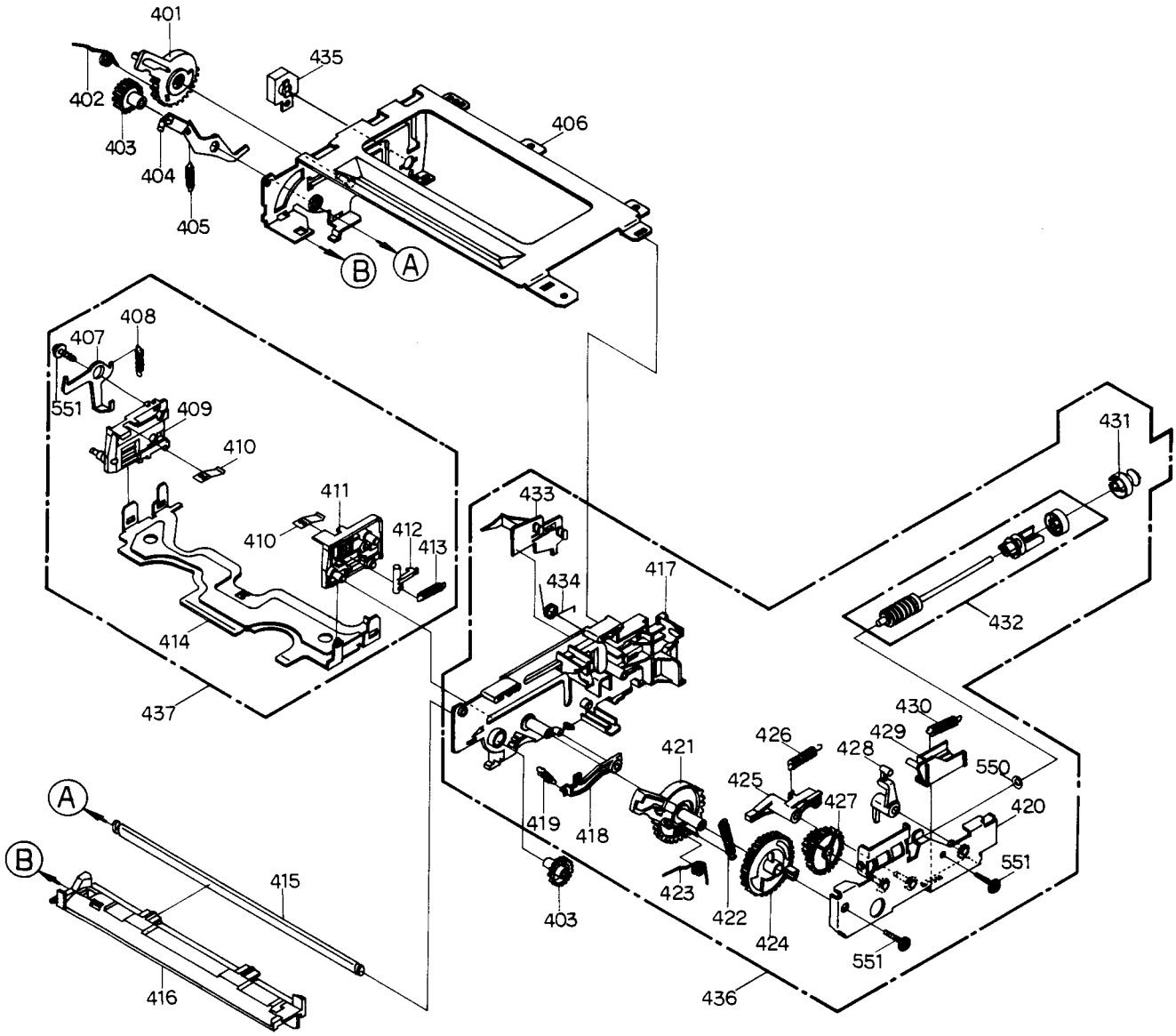
MECHANICAL EXPLODED VIEW

MECHANICAL EXPLODED VIEW

DECK EXPLODED VIEW



DECK EXPLODED VIEW



2-3339

THIS ELECTRICAL PARTS LIST IS STANDARD PART LIST. BUT
INTERCHANGEABLE PARTS MAY BE USED IN THE UNIT.
SEE THE INTERCHANGEABLE PARTS LIST AFTER THE STANDARD PARTS LIST.

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
		RESISTORS
R406	R3B18A680J	R.METAL OXIDE 68 OHM 2W
⚠ R411	R425T6563F	R.METAL 56K OHM 1/6W
⚠ R412	R425T4183F	R.METAL 18K OHM 1/4W
R421	R3B181273J	R.METAL OXIDE 27K OHM 1W
R426	R3B18A103J	R.METAL OXIDE 10K OHM 2W
⚠ R430	R5A2CE100J	R.CEMENT 10 OHM 7W
R434	R00106393J	RC 39K OHM 1/6W
	R00106224J	RC 220K OHM 1/6W
⚠ R441	R635821R8J	R.FUSE 1.8 OHM 1/2W
⚠ R446	R61582680J	R.FUSE 68 OHM 1/2W
⚠ R448	R3B18A122J	R.METAL OXIDE 1.2K OHM 2W
⚠ R458	R615814R7J	R.FUSE 4.7 OHM 1W
⚠ R459	R3B18A102J	R.METAL OXIDE 1K OHM 2W
⚠ R501	R5A2CD5R6K	R.CEMENT 5.6 OHM 5W
R506	R3B18B270J	R.METAL OXIDE 27 OHM 3W
⚠ R508	R3118B1R8J	R.METAL OXIDE 1.8 OHM 3W
⚠ R512	R6140A150J	R.FUSE 15 OHM 2W
R513	R3B18A330J	R.METAL OXIDE 33 OHM 2W
⚠ R514	R615816R8J	R.FUSE 6.8 OHM 1W
⚠ R518	R002T2824J	RC 820K OHM 1/2W
R664	R00106223J	RC 22K OHM 1/6W
R765	R00106563J	RC 56K OHM 1/6W
R802	R3B181103J	R.METAL OXIDE 10K OHM 1W
R805	R3B181103J	R.METAL OXIDE 10K OHM 1W
R810	R3B181103J	R.METAL OXIDE 10K OHM 1W
⚠ R901	R61584150J	R.FUSE 15 OHM 1/4W
⚠ R910	R61584270J	R.FUSE 27 OHM 1/4W
R968	R00106333J	RC 33K OHM 1/6W
R976	R00106103J	RC 10K OHM 1/6W
R985	R001T6395J	RC 3.9M OHM 1/6W
R1091	R00106222J	RC 2.2K OHM 1/6W
R1092	R00106103J	RC 10K OHM 1/6W
R1101	R3120A3R9J	R.METAL OXIDE 3.9 OHM 2W
⚠ R4080	R002T2121J	RC 120 OHM 1/2W
R5019	R00104392J	RC 3.9K OHM 1/4W
⚠ R7505	R001T4101J	RC 100 OHM 1/4W
⚠ R7506	R002T2392J	RC 3.9K OHM 1/2W
⚠ R7507	R002T2332J	RC 3.3K OHM 1/2W
R8028	R00106182J	RC 1.8K OHM 1/6W
R8030	R00106332J	RC 3.3K OHM 1/6W
R8191	R00106223J	RC 22K OHM 1/6W
		CAPACITORS
C091	C020B04H3K	CC 0.022 UF F
C094	C020SL4N2K	CC 390 PF SL
C096	C020B04H3K	CC 0.0022UF F
C241	C020SL4L2K	CC 330 PF SL
C361	CH4TB04N2K	CC 390 PF 50V
C414A	P23200105J	CMPL 1.0 UF 50V
C414B	P23200105J	CMPL 1.0 UF 50V
C420	P441F2564J	CMPP 0.56 UF 200V
⚠ C429	E031T4471M	CE 470 UF 35V
⚠ C431	E025FD100M	CE 10 UF 250V
C433	P341F1103J	CPP 0.01 UF 100V
C436	P441F2394J	CMPP 0.39 UF 200V
C437	C0D4BN7N2K	CC 390 PF 2KV BN
C438	C0D4BN7W2K	CC 820 PF 2KV BN
⚠ C439	P4A2FG912J	CMPP 0.0091UF 2KV
C445	E027F3102M	CE 1000 UF 25V
C454	C02TSL512K	CC 100 PF 500V SL
C455	C020B04H3K	CC 0.0022UF B
C501	C02BB07H3K	CC 0.0022UF 2KV B
C502	C02BB07H3K	CC 0.0022UF 2KV B
C503	C02BB07H3K	CC 0.0022UF 2KV B
⚠ C506	P6170B474M	CMPL 0.47 UF 250V
⚠ C507	E03GFH151M	CE 150 UF 400V
⚠ C509	E027T8100M	CE 10 UF 100V
C511	C0D4BN713K	CC 1000 PF 2KV BN
⚠ C514	E027F2102M	CE 1000 UF 16V
C516	C0D4BN713K	CC 1000 PF 2KV BN
⚠ C517	E025FB221M	CE 220 UF 160V
⚠ C518	E031T4471M	CE 470 UF 35V
⚠ C519	E027T2470M	CE 47 UF 16V
⚠ C521	E027T5010M	CE 1 UF 50V
C523	CA1B30KH3M	CC 2200 PF 400V AC
C555	CA1B30K13M	CC 1000 PF 400V AC
C606	E027054R7M	CE 4.7 UF 50V
C673	C020SL413K	CC 0.001 UF SL
C675	C020B04Q3K	CC 0.0047UF B
C676	C020SL4L2K	CC 330 PF SL
C681	CH40B0412K	CC 100 PF 50V
C801	C020B07H3K	CC 0.0022UF 2KV B

REF.NO	PART NO	DESCRIPTION
		CAPACITORS (CONT)
C978	E02105R22M	CE 0.22 UF 50V
C1011	E01102470M	CE 47 UF 16V
C1030	CH40F0415Z	CC 0.1 UF 50V
C1031	C020F04Q4Z	CC 0.047 UF F
C1032	CH40F0415Z	CC 0.1 UF 50V
C1033	E01E05010M	CE 1 UF 50V
C2072	CH40F03H4Z	CC 22000 PF 25V
⚠ C5031	E011T2470M	CE 47 UF 16V
⚠ C7501	E031F3332M	CE 3300 UF 25V
⚠ C7502	E011F3222M	CE 2200 UF 25V
⚠ C7504	E027T8470M	CE 47 UF 100V
⚠ C7508	E011T5100M	CE 10 UF 50V
⚠ C7510	E011T4470M	CE 47 UF 35V
⚠ C7511	E011T4470M	CE 47 UF 35V
⚠ C7512	E011T4470M	CE 47 UF 35V
C8006	E59A0P473Z	CE 0.047 UF 5.5V
C8012	P61300473J	CMPL 0.047 UF 50V
C8020	E01NT52R2M	CE 2.2 UF 50V
		SEMICONDUCTORS
D130	D17T001320	DIODE,SILICON 1SS132T-77
D201	D93T05R10Y	DIODE,ZENER GZA5.1 Y BT-T
D202	D170001320	DIODE,SILICON 1SS132
D401	D23TFD05TG	DIODE,RECTIFIER DFD05TG-BT
D402	D230FH10TG	DIODE,RECTIFIER DFH10TG
D403	D17T001320	DIODE,SILICON 1SS132T-77
D405	D23TFD05TG	DIODE,RECTIFIER DFD05TG-BT
⚠ D411	D93T01100Y	DIODE,ZENER GZA11 Y BT
D412	D23TFD05TG	DIODE,RECTIFIER DFD05TG-BT
D413	D17T001320	DIODE,SILICON 1SS132T-77
D414	D17T024720	DIODE,SILICON 1S2472T-77
D416	D93T02000Y	DIODE,ZENER GZA20 Y BT
⚠ D501	D2BHRM11C0	DIODE,RECTIFIER RM11C
⚠ D502	D2BHRM11C0	DIODE,RECTIFIER RM11C
⚠ D503	D2BHRM11C0	DIODE,RECTIFIER RM11C
⚠ D504	D2BHRM11C0	DIODE,RECTIFIER RM11C
D505	D28T10ELS2	DIODE,RECTIFIER 10ELS2TA1
⚠ D506	D28015DF60	DIODE,SILICON 15DF6
⚠ D507	D28115DF60	DIODE,SILICON 15DF6-FC
⚠ D509	D2B000R2M0	DIODE,AVALANCHE R2M
D510	D28T10ELS2	DIODE,RECTIFIER 10ELS2TA1
D511	D25T5566B0	DIODE,RECTIFIER S5566B
⚠ D518	D28F30DF60	DIODE,RECTIFIER 30DF6 FC
D602	D93T06R20Z	DIODE,ZENER GZA6.2 Z BT
D603	D17T001320	DIODE,SILICON 1SS132T-77
D604	D93T05R10Y	DIODE,ZENER GZA5.1 Y BT-T
D605	D17T001320	DIODE,SILICON 1SS132T-77
D606	D17T001320	DIODE,SILICON 1SS132T-77
D607	D17T001320	DIODE,SILICON 1SS132T-77
D608	D93T01800Y	DIODE,ZENER GZA18 Y BT
D609	D23TFD05TG	DIODE,RECTIFIER DFD05TG-BT
D610	D17T001320	DIODE,SILICON 1SS132T-77
D611	D17T001320	DIODE,SILICON 1SS132T-77
D612	D170001320	DIODE,SILICON 1SS132
D613	D170001320	DIODE,SILICON 1SS132
D651	D17T001320	DIODE,SILICON 1SS132T-77
D666	D93T03R30X	DIODE,ZENER GZA3.3 X BT
D701	D17T001320	DIODE,SILICON 1SS132T-77
D702	D6J0KB2620	DIODE,VARISTA KB-262
D703	D93T01100Y	DIODE,ZENER GZA11 Y BT
D801	D17T024720	DIODE,SILICON 1S2472T-77
D802	D17T024720	DIODE,SILICON 1S2472T-77
D803	D17T024720	DIODE,SILICON 1S2472T-77
D1003	D17T001320	DIODE,SILICON 1SS132T-77
D1005	D94TA130J1	DIODE,ZENER HZS13JB1-TE
D1010	D17T001320	DIODE,SILICON 1SS132T-77
D1012	D28T011E10	DIODE,SILICON 11E1TA1
D1013	D94TA100J2	DIODE,ZENER HZS10JB2-TE
D1016	D28T011E10	DIODE,SILICON 11E1TA1
D1017	D130DS442X	DIODE,SILICON DS442X
D2003	D17T001320	DIODE,SILICON 1SS132T-77
D2004	D17T001320	DIODE,SILICON 1SS132T-77
D2007	D17T001320	DIODE,SILICON 1SS132T-77
D2008	D17T001320	DIODE,SILICON 1SS132T-77
D2012	D28T011E10	DIODE,SILICON 11E1TA1
D2013	D17T001320	DIODE,SILICON 1SS132T-77
D2014	D17T001320	DIODE,SILICON 1SS132T-77
D2015	D17T001320	DIODE,SILICON 1SS132T-77
D3001	D17T001320	DIODE,SILICON 1SS132T-77
D3004	D17T001320	DIODE,SILICON 1SS132T-77
D4001	DD3RLFB01L	DIODE,SILICON LFB-01L
D4002	DD3RLFB01L	DIODE,SILICON LFB-01L
D4005	D94TA9R1J2	DIODE,ZENER HZS9R1JB2-TE
D4010	D940A130J2	DIODE,ZENER HZS13JB2

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
	SEMICONDUCTORS (CONT)	
D4020	D940A6R8J2	DIODE,ZENER HZS6R8JB2
D5001	D13TGMA010	DIODE,SILICON GMA-01-BT
⚠ D7501	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7502	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7503	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7504	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7505	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7506	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7507	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7508	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7509	D28T011E20	DIODE,SILICON 11E2TA1
D7511	DB7T2MR150	GLASS SEALED LED LTZ-MR15-T77
D7513	D93T01300Y	DIODE,ZENER GZA13 Y BT
D7514	D17T001320	DIODE,SILICON 1SS132T-77
⚠ D7516	D13TDS442X	DIODE,SILICON DS442X-BT
⚠ D7517	D13TDS442X	DIODE,SILICON DS442X-BT
D8001	D93T06R80Y	DIODE,ZENER GZA6.8 Y BT
D8002	D93T06R80Y	DIODE,ZENER GZA6.8 Y BT
D8003	DD3RLFB01L	DIODE,SILICON LFB-01L
D8004	DD3RLFB01L	DIODE,SILICON LFB-01L
D8005	002132Q030	LED SLZ136-14-AB-T1
D8006	D13TGMA010	DIODE,SILICON GMA-01-BT
D8010	D13TGMA010	DIODE,SILICON GMA-01-BT
D8101	002112Q050	LED LN81RCPH-(TA2)
D8102	002112Q050	LED LN81RCPH-(TA2)
D8103	002112Q050	LED LN81RCPH-(TA2)
D8104	002112Q050	LED LN81RCPH-(TA2)
D8105	002112Q050	LED LN81RCPH-(TA2)
D8106	002112Q050	LED LN81RCPH-(TA2)
D8107	002112Q050	LED LN81RCPH-(TA2)
D8108	002112Q050	LED LN81RCPH-(TA2)
IC102	103S063580	IC LA6358S
IC105	103S079100	IC LA7910
IC201	103DE7520N	IC LA7520N
IC202	103S072100	IC LA7210
IC351	103SP42650	IC LA4265
IC401	106DE20250	IC M52025SP
⚠ IC402	102SD14880	IC UPC1488H
⚠ IC501	123S973480	IC STK7348
⚠ IC502	103897812V	IC L7812V-SA
IC601	152D06326C	IC UPD6326C
IC651	156D07007A	IC OEC7007
IC901	105DE77780	IC TA7778P
IC951	106DE20260	IC M52026SP
IC1001	154D50017A	IC OEC0017
IC1002	106S51954A	IC M51954AL
IC1003	107S062470	IC BA6247
IC1005	107D003930	IC BA10393
IC2001	197D49011A	IC OEC9011
IC3001	103D373300	IC LA7330
IC3701	107TC7025L	IC BA7025L
IC4001	103D37323A	IC LA7323A
IC4002	103D389920	IC LC8992
IC4101	103DG73200	IC LA7320
⚠ IC5001	103T772960	IC LA7296
⚠ IC7501	123S953420	IC STK5342
⚠ IC7502	102190574J	IC UPC574J-T
IC8001	150DT8002A	IC OEC8002A
IC8002	152D06252C	IC UPD6252C
IC8003	101901280M	IC MN1280
Q101	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q102	TN7TB03001	COMPOUND TRANSISTOR DTC114E S-T
Q201	TC3T030000	TRANSISTOR,SILICON 2SC3000-AA
Q205	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q235	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q301	TN7TD03001	COMPOUND TRANSISTOR DTC144ESTP
Q401	TC3T022710	TRANSISTOR,SILICON 2SC2271-AE
⚠ Q402	TD5G015540	TRANSISTOR,SILICON 2SD1554
Q403	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q404	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q421	TA2T007330	TRANSISTOR,SILICON 2SA733-T
⚠ Q501	TD3T011110	TRANSISTOR,SILICON 2SD1111-AA
Q602	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q606	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q607	TA2T007330	TRANSISTOR,SILICON 2SA733-T
Q608	TA2T007330	TRANSISTOR,SILICON 2SA733-T
Q609	TA2T007330	TRANSISTOR,SILICON 2SA733-T
Q611	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q612	TA2T007330	TRANSISTOR,SILICON 2SA733-T
Q615	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q616	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q617	TC2T00945P	TRANSISTOR,SILICON 2SC945PT
Q618	TN7TB03001	COMPOUND TRANSISTOR DTC114E S-T
Q620	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP

REF.NO	PART NO	DESCRIPTION
	SEMICONDUCTORS (CONT)	
Q621	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP
Q651	T25T117GR5	FET 2SK117-GR
Q652	TN7TD03001	COMPOUND TRANSISTOR DTC144ESTP
Q701	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q702	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q703	TC2T009450	TRANSISTOR,SILICON 2SC945-T
Q704	TN7TB03001	COMPOUND TRANSISTOR DTC114E S-T
Q801	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
Q802	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
Q803	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
Q804	TC30034680	TRANSISTOR,SILICON 2SC3468
Q805	TC30034680	TRANSISTOR,SILICON 2SC3468
Q806	TC30034680	TRANSISTOR,SILICON 2SC3468
Q901	TA2T00952L	TRANSISTOR,SILICON 2SA952LT
Q951	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
⚠ Q1001	TD3T011110	TRANSISTOR,SILICON 2SD1111-AA
Q1005	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1006	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
⚠ Q1007	TC3T022740	TRANSISTOR,SILICON 2SC2274-AA
Q1010	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP
⚠ Q1011	TB3T006980	TRANSISTOR,SILICON 2SB698-AA
Q1013	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP
Q1014	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1015	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP
Q1017	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1018	TN70B03001	COMPOUND TRANSISTOR DTC114E S
Q1019	TN70D03001	COMPOUND TRANSISTOR DTC144E S
Q2001	TD3T011110	TRANSISTOR,SILICON 2SD1111-AA
Q2002	TB3T009260	TRANSISTOR,SILICON 2SB926-AA
Q2003	TP7TD05001	COMPOUND TRANSISTOR DTA144EKT147
Q2004	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q2005	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q2007	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q2009	TP7TD05001	COMPOUND TRANSISTOR DTA144EKT147
Q2010	TN7TD05001	COMPOUND TRANSISTOR DTC144EKT147
Q3001	TA3T0608K0	TRANSISTOR,SILICON 2SA608K-NP-AA
Q3002	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q3004	TC3T0536S0	TRANSISTOR,SILICON 2SC536-SPA-AC
Q3006	TC3T0536S0	TRANSISTOR,SILICON 2SC536-SPA-AC
Q3007	TC3T0536S0	TRANSISTOR,SILICON 2SC536-SPA-AC
Q3008	TC3T0536S0	TRANSISTOR,SILICON 2SC536-SPA-AC
Q3701	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP
Q3702	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q4001	T67A1037K0	TRANSISTOR,SILICON 2SA1037KT147
Q4002	T83A028120	TRANSISTOR,SILICON 2SC2812-TA
Q4003	T83A028120	TRANSISTOR,SILICON 2SC2812-TA
Q4005	T83A028120	TRANSISTOR,SILICON 2SC2812-TA
Q4006	T83A028120	TRANSISTOR,SILICON 2SC2812-TA
Q4007	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q4008	TA3T0608K0	TRANSISTOR,SILICON 2SA608K-NP-AA
Q4009	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q4010	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
⚠ Q5005	TC1T013170	TRANSISTOR,SILICON 2SC1317-T
⚠ Q7501	TA3T0984K0	TRANSISTOR,SILICON 2SA984K-AA
⚠ Q7502	TD70019330	TRANSISTER,SILICON 2SD1933
⚠ Q7505	TD3H018250	TRANSISTOR,SILICON 2SD1825Z-LU
Q8001	T83A028120	TRANSISTOR,SILICON 2SC2812-TA
Q8002	TN3TD03001	COMPOUND TRANSISTOR 2SC3399-AC
Q8190	TC3T0536S0	TRANSISTOR,SILICON 2SC536-SPA-AC
Q8191	TC3T0536S0	TRANSISTOR,SILICON 2SC536-SPA-AC
	COILS & TRANSFORMERS	
L001	021JA6101K	COIL 100 UH
L202	021JA6R82M	COIL 0.82 UH
L203	033600016C	COIL,VIDEO IFT 3600016
L204	033600017C	COIL,VIDEO IFT 3600017
L205	021JA6150K	COIL 15 UH
L206	033600018C	COIL,VIDEO IFT 3600018
L207	03360L001C	COIL,TRAP 360L001
L401	021679472K	COIL 4.7 MH
L402	022R000008	COIL,LINEARITY 1429MS
L406	021U04180M	COIL RX9P180M
⚠ L501	0290000002	COIL,LINE FILTER 9-000002
⚠ L502	0290000002	COIL,LINE FILTER 9-000002
⚠ L503	028J140017	COIL,DEGAUSS 8J140017
⚠ L504	02A1281871	CORE,TRIDAL KR06TT281807
L504	02A1281871	CORE,TRIDAL KR06TT281807
L601	021JA6270K	COIL 27 UH
L602	021JA6100K	COIL 10 UH
L605	03352R0177	COIL,CHROMA 352R017
L608	0216048R2M	COIL ELF0607SK1-8R2
L651	021JA6150K	COIL 15 UH
L653	021JA6101K	COIL 100 UH
L701	021JA6120K	COIL 12 UH
L801	021673101K	COIL 100 UH

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
	COILS & TRANSFORMERS (CONT)	
L802	02A1B5A5C1	FILTER,LINE KR06TT251512
L951	021JA6100K	COIL 10 UH
L952	021JA6100K	COIL 10 UH
L953	021JA6100K	COIL 10 UH
L954	021JA6101K	COIL 100 UH
L955	021JA68R2K	COIL 8.2 UH
L956	03302R0028	COIL,CHROMA 302R002
L957	03352R0168	COIL,CHROMA 352R016
L958	0335000098	COIL,MATCHING 3500009
L960	021673391K	COIL 390 UH
L961	021673391K	COIL 390 UH
L1001	021B73101K	COIL 100 UH
L3002	021JA6180K	COIL 18 UH
L3003	021JA63R3K	COIL 3.3 UH
L3004	021JA6101K	COIL 100 UH
L3005	021B73101K	COIL 100 UH
L3006	021JA6150K	COIL 15 UH
L3701	021B73101K	COIL 100 UH
L3702	0326220011	COIL,TRAP 2622001
L4001	021JA6181K	COIL 180 UH
L4003	021JA6470K	COIL 47 UH
L4004	021JA61R0M	COIL 1.0 UH
L4005	021B73101K	COIL 100 UH
L4006	021B73101K	COIL 100 UH
L4007	021JA6560K	COIL 56 UH
L4009	021JA6151K	COIL 150 UH
L4010	021JA6220K	COIL 22 UH
L4011	021JA6100K	COIL 10 UH
L4012	021JA6180K	COIL 18 UH
L4013	021JA6150K	COIL 15 UH
L4014	021JA6121K	COIL 120 UH
L4015	021JA6270K	COIL 27 UH
L4016	021JA6101K	COIL 100 UH
L4101	021B73101K	COIL 100 UH
L4102	021B73101K	COIL 100 UH
L5001	021B73101K	COIL 100 UH
L5002	021B73102K	COIL 1000 UH
L5003	021J74682J	COIL 6.8 MH
L8002	02A1B0A0A1	CORE,FERRITE KR06TT201110
L8003	02A1281871	CORE,TRIDAL KR06TT281807
L8006	02A1B0A0A1	CORE,FERRITE KR06TT201110
L8013	02A1B0A0A1	CORE,FERRITE KR06TT201110
T401	03305Y001C	TRANS.,HORIZONTAL DRIVE 305Y001
⚠ T501	048139011G	TRANSFORMER,SWITCHING 8139011
⚠ T5001	0336260028	COIL,BIAS OSC 3626002
⚠ T7501	0405570263	TRANSFORMER,POWER AC 0557026
	JACKS	
J351	060C121008	JACK,RCA 3.5 TC38-001
J701	0632000046	JACK PLATE JPJ1072-01-430
⚠ J801	0662120007	SOCKET,CRT HPS1171-01-050
	SWITCHES	
SW401	0510B22001	SWITCH,SLIDE SS-22F16G7
SW501	0530105005	SWITCH,PUSH ESB-90217S
SW8001	0504101T20	SWITCH,TACT EVQ-11405K
SW8004	0504101T20	SWITCH,TACT EVQ-11405K
SW8005	0504101T20	SWITCH,TACT EVQ-11405K
SW8007	0504101T20	SWITCH,TACT EVQ-11405K
SW8009	0504101T20	SWITCH,TACT EVQ-11405K
SW8101	0504101T20	SWITCH,TACT EVQ-11405K
SW8102	0504101T20	SWITCH,TACT EVQ-11405K
SW8103	0504101T20	SWITCH,TACT EVQ-11405K
SW8104	0504101T20	SWITCH,TACT EVQ-11405K
	VARIABLE RESISTORS	
VR201	V1263Q3BT5	VR,SEMIFIXED RH0636CS3R07B
VR401	V1263Q4B03	VR,SEMIFIXED RH0624CS4J0A
VR402	V1262H4B01	VR,SEMIFIXED RH0614CJ4J0F
VR602	V126314BT5	VR,SEMIFIXED RH0636C14R07B
VR604	V1263Q4BT5	VR,SEMIFIXED RH0636CS4R07B
VR606	V126214BT1	VR,SEMIFIXED RH0632C14R01
VR951	V126214BT1	VR,SEMIFIXED RH0632C14R01
VR952	V126316B03	VR,SEMIFIXED RH0624C16J
VR953	V126314B03	VR,SEMIFIXED RH0624C14J0D
VR954	V1263H3B01	VR,SEMIFIXED RH0615CJ3J09
VR955	V126313BT5	VR,SEMIFIXED RH0636C13R07B
VR2001	V1263Q5BT5	VR,SEMIFIXED RH0636CS5R07B
VR2002	V126315BT5	VR,SEMIFIXED RH0636C15R07B
VR3701	V126313BT5	VR,SEMIFIXED RH0636C13R07B
VR4001	V1263H4BT5	VR,SEMIFIXED RH0636CJ4R07B
VR4002	V126314BT5	VR,SEMIFIXED RH0636C14R07B
VR4003	V1263L3BT5	VR,SEMIFIXED RH0636CN3R07B

REF.NO	PART NO	DESCRIPTION
	VARIABLE RESISTORS (CONT)	
VR4004	V126314BT5	VR,SEMIFIXED RH0636C14R07B
VR4005	V126314BT5	VR,SEMIFIXED RH0636C14R07B
VR4101	V126214BT1	VR,SEMIFIXED RH0632C14R01
VR4102	V126214BT1	VR,SEMIFIXED RH0632C14R01
VR5001	V126314BT5	VR,SEMIFIXED RH0636C14R07B
VR5002	V1263E5B03	VR,SEMIFIXED RH0624CE5J
VR8001	V014025B01	VR,ROTARY EVU-F3AM20B25
	P.C. BOARDS ASS'Y	
PCB001	A39408A07AS	PCB ASS'Y TM0187-S
PCB002	A39408A10A	PCB ASS'Y TE0647
PCB003	A39408A11A	PCB ASS'Y TC0144
PCB004	A39408A39A	PCB ASS'Y TE0632
PCB005	A39408A03A	PCB ASS'Y VE0341
PCB006	A39408A04A	PCB ASS'Y VE0356
PCB007	A39408A14A	PCB ASS'Y TE0645
PCB101	A39408A01A	PCB ASS'Y VV0178
PCB401	A43709A33A	PCB ASS'Y VE0244
PCB701	A39408A02A	PCB ASS'Y VP0091
PCB702	A39408A02A	PCB ASS'Y VE0343
	MISCELLANEOUS	
ANT001	1251108005	ANTENNA ROD T4-216AP
B401	024JT03551	CORE,BEADS FBA04HA450AB-00
B402	024JT03551	CORE,BEADS FBA04HA450AB-00
B501	024JT03551	CORE,BEADS FBA04HA450AB-00
B502	024JT03551	CORE,BEADS FBA04HA450AB-00
B503	024JT03551	CORE,BEADS FBA04HA450AB-00
B504	024JT03551	CORE,BEADS FBA04HA450AB-00
B505	024JT03551	CORE,BEADS FBA04HA450AB-00
B506	024JT03551	CORE,BEADS FBA04HA450AB-00
B507	0246552553	CORE,BEADS BF50-5.5*5*2.5
B508	0246552553	CORE,BEADS BF50-5.5*5*2.5
B509	0246451652	CORE,BEADS BF25-4.5*5*1.6
B510	0246451652	CORE,BEADS BF25-4.5*5*1.6
BT001	141T004003	BATTERY,MANGAN UM-4
BT002	141T004003	BATTERY,MANGAN UM-4
CD002	068101314A	CORD,CONNECTOR 8101314A
CD094	068101314A	CORD,CONNECTOR 8101314A
CD099	068D01126A	CORD,CONNECTOR 8D01126A
CD351	068D12242A	CORD,CONNECTOR 8D12242A
CD352	068D12240A	CORD,CONNECTOR 8D12240A
⚠ CD501	1201650001	CORD,AC 1201650001
CD502	068101314A	CORD,CONNECTOR 8101314A
CD601	068318072A	CORD,CONNECTOR 8318072A
CD802	122Q044003	CORD,JUMPER 2Q044003
CD803	068M01303A	CORD,CONNECTOR 8M01303A
CF001	116F3TH4Z1	FILTER,EMI LTSTF223ZBTB
CF201	1027038R91	FILTER,SAW F1034
CF202	1012105R51	FILTER,CERAMIC TRAP TPS5.5MB
CF301	101225R501	FILTER,CERAMIC CDA5.5MC24B
CF302	1012005R52	FILTER,CERAMIC SFE5.5MC2
CF351	116F3TH4Z1	FILTER,EMI LTSTF223ZBTB
CF701	116F2TH3M1	FILTER,EMI LTSTX222MBTB
CP351	0694120059	CONNECTOR,PCB SIDE 171826-2
CP352	0694120050	CONNECTOR,PCB SIDE 2-171826-2
CP401	069D340018	CONNECTOR,PCB SIDE TS-80P-04-V1
CP501	0694430100	CORD,UX CONNECTOR 2-173270-3
CP502	069Z320029	CONNECTOR,PCB SIDE TV-50P-02-V1
CP803	069D010010	CONNECTOR,PCB SIDE 005P-2100
CP901	069Q190179	CONNECTOR,PCB SIDE CPB1809-0101
CP902	069H150209	CONNECTOR,PCB SIDE ILG5P-S3L-PCB
CP951	069H1D0209	CONNECTOR,PCB SIDE ILG13P-S3L-PCB
CP952	069Q160179	CONNECTOR,PCB SIDE CPB1806-0101
CD2002	068126028A	CORD,EIS CONNECTOR 8126028A
CD2003	068129020A	CORD,EIS CONNECTOR 8129020A
CD2501	068126026A	CORD,EIS CONNECTOR 8126026A
CD2502	068126027A	CORD,EIS CONNECTOR 8126027A
CD4102	068128028A	CORD,EIS CONNECTOR 8128028A
⚠ CD7501	068132052A	CORD,EIS CONNECTOR 8132052A
CD7502	1226031204	CORD,JUMPER 26031204
CD8001	1226052803	CORD,JUMPER 26052803
CD8002	1226053301	CORD,JUMPER 26053301
CD8003	06812C014B	CORD,EIS CONNECTOR 812C014B
CD8004	06812A007A	CORD,EIS CONNECTOR 812A007A
CD8006	068129022B	CORD,EIS CONNECTOR 8129022B
CD8007	068127023A	CORD,EIS CONNECTOR 8127023A
CD8008	068112317A	CORD,EIS CONNECTOR 8112317A
CD8010	068101313A	CORD,EIS CONNECTOR 8101313A
CF3701	10114R1703	FILTER,CERAMIC EFCS4R17MS4A
CP0006	0694290129	CONNECTOR,PCB SIDE 173981-9
CP2001	069H220329	CONNECTOR,PCB SIDE IL-S-2P-S2T2-EF

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
	MISCELLANEOUS (CONT)	
CP2002	0694260129	CONNECTOR,PCB SIDE 173981-6
CP2003	0694290129	CONNECTOR,PCB SIDE 173981-9
CP2004	06942F0129	CONNECTOR,PCB SIDE 1-173981-5
CP2501	0694260124	CONNECTOR,PCB SIDE 4-173981-6
CP2502	0694280124	CONNECTOR,PCB SIDE 4-173981-8
CP4101	0694280139	CONNECTOR,PCB SIDE 173979-8
CP5001	069H250329	CONNECTOR,PCB SIDE IL-S-5P-S2T2-EF
CP7001	069D320018	CONNECTOR,PCB SIDE TS-80P-02-V1
CP7503	0694430100	CORD,UX CONNECTOR 2-173270-3
CP8001	06942C0129	CONNECTOR,PCB SIDE 1-173981-2
CP8003	06942C0129	CONNECTOR,PCB SIDE 1-173981-2
CP8006	0694290129	CONNECTOR,PCB SIDE 173981-9
CP8007	0694270129	CONNECTOR,PCB SIDE 173981-7
CP8008	0694220139	CONNECTOR,PCB SIDE 173979-2
CP8104	06942A0129	CONNECTOR,PCB SIDE 1-173981-0
DL601	103S0R6501	DELAY LINE ELT-10Z265N
DL951	104114R43G	DELAY LINE,GLASS EFDEN645A31F
DL3001	104A24R436	DELAY LINE,GLASS ADL-SE2244R
EAD351	074N130007	EARPHONE SE100-335
⚠ F501	080GT2R501	FUSE FST 034.3121 T 2.5A
⚠ FB401	043714002J	TRANSFORMER,FLYBACK 3714002
FH501	067M0T0004	HOLDER,FUSE H0451
FH502	067M0T0005	HOLDER,FUSE H0452
⚠ F7501	080ET1R601	FUSE BET 1.6A(T) 250V
⚠ F7502	080ET02001	FUSE BET 2 A(T) 250V
⚠ F7503	080ET02001	FUSE BET 2 A(T) 250V
FH7501	067M0T0004	HOLDER,FUSE H0451
FH7502	067M0T0005	HOLDER,FUSE H0452
ICP101	084E01R601	IC PROTECTOR PRF-1600
⚠ ICP751	084EF0R301	IC PROTECTOR PRF-315-F003
NR1001	110E3472T2	R,NETWORK RN5E4A472J01
NR1002	110E3223T2	R,NETWORK RN5E4A223J01
NR1003	110E3223T2	R,NETWORK RN5E4A223J01
NR1004	110E3472T2	R,NETWORK RN5E4A472J01
OS8001	0779010001	REMOTE RECEIVER GP-1U521
PF3001	1147L15605	FILTER,LOW PASS 47L15605
PF3002	1147B44608	FILTER,BAND PASS 47B44608
PF3003	1147B50604	FILTER,BAND PASS 47B50604
PF4001	1147L30606	FILTER,LOW PASS 47L30606
PF4002	1147H14605	FILTER,HIGH PASS 47H14605
PF4003	1147L33605	FILTER,LOW PASS 47L33605
⚠ RY501	0560T20102	RELAY OMIT-SS-112DM
SP351	070V032004	SPEAKER S08J47
⚠ TH501	D810M180H0	DEGAUSS ELEMENT ERP-F5B0M180H
TM001	076G031011	TRANSMITTER EUR-531104
TU001	0145711008	TUNER,UHF-VHF TERE1-067A
TC8001	0100614T08	C,CERAMIC TRIMMER VCT51F716A
TH1001	DS10L802S0	THERMISTOR ERT-D2FHL802S
⚠ V801	098F140437	TUBE,CATHODE RAY 37GDA85X-TC20
X251	1003R50001	CERAMIC OSCILLATOR KBR-500AH2
X401	1002R50004	CERAMIC OSCILLATOR CSB500F9
X601	10064R4306	CRYSTAL HC-49/U 4433.619KHZ
X651	100617R702	CRYSTAL HC-49/U 17734.475KHZ
X951	100D4R2501	CRYSTAL 4R2501
X1001	1002T4R001	CERAMIC OSCILLATOR CSA4.00MG-TF01
X3001	1006A4R302	CRYSTAL HC-49/U 4.43361875MHZ
X8001	100D32R801	CRYSTAL DT-26S 32.768KHZ
X8002	1006A4R101	CRYSTAL DS-MAT 4.194304MHZ

RESISTOR
RC.....CARBON RESISTOR

CAPACITORS
CC.....CERAMIC CAPACITOR
CE.....ALUMI ELECTROLYTIC CAPACITOR
CP.....POLYESTER CAPACITOR
CPP.....POLYPROPYLENE CAPACITOR
CPL.....PLASTIC CAPACITOR
CMP.....METAL POLYESTER CAPACITOR
CMPL.....METAL PLASTIC CAPACITOR
CMPP.....METAL POLYPROPYLENE CAPACITOR
CST.....STYROL CAPACITOR

INTERCHANGEABLE PARTS LIST

NOTE:THE FOLLOWING PART(S) MAY BE SUBSTITUTED FOR PARTS INDICATED IN THE BASIC PART(S) LIST (WITH THE SAME REF.NO.). THESE PARTS SHARE THE SAME ELECTRICAL CHARACTERISTICS AND OTHER ELEMENTS FOR COMMON USAGE. EITHER PART NUMBER MAY BE USED IN THIS UNIT.

REF.NO	DESCRIPTION (PART NO)	DESCRIPTION (PART NO)
⚠ L503	8J140017 (028J140017)	8R140017 (028R140017)
⚠ T5001	3626002 (0336260028)	3626001 (0336260011)

DECK REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION	
301	850P500023	SPRING,TR.	
302	850A600093	TENSION,BAND ASS'Y	
303	850A400077	TENSION,ARM ASS'Y	
304	850P800141	SPRING,TENSION ARM	
305	850A200028	REEL DISK S ASS'Y	
306	850A600117	MAIN BRAKE S ASS'Y	
307	850P800168	SPRING,MAIN BRAKE	
308	850P600289	ARM,S-S BRAKE	
309	850P800164	SPRING,SS BRAKE	
310	850A400087	BASE,S INCLINED ASS'Y	
311	850P800171	SPRING,M-B 3	
312	850A200029	REEL DISK T ASS'Y	
313	850A600118	MAIN BRAKE T ASS'Y	
314	850A400080	BASE,T INCLINED ASS'Y	
315	850P500046	ROLLER,IMPEDANCE	
316	850P600274	FLANGE,P1	
317	850P800075	SPRING,P1	
318	850P600281	LEVER,REC.SW.	
319	850P500042	BASE,AC HEAD 2	
320	850P800150	SPRING,AC HEAD BASE	
321	850A600102	LOADING MOTOR BOX ASS'Y	
322	850P600276	BELT,LOADING MOTOR	
323	850A500008	P-R,LEVER ASS'Y	
324	850P600314	NUT,ADJUST X	
325	850A000027	MAIN CHASSIS ASS'Y	
326	850A400073	PINCH ROLLER ARM ASS'Y	
327	850P800149	SPRING,P-R ARM	
328	850A400078	LIMITER,POST ARM ASS'Y	
329	850P800148	SPRING,L-P ARM	
330	850P600323	CAM 1	
331	850A600100	WORM ASS'Y	
332	850A400085	G-ROLLER ASS'Y	
333	850A300031	LOADING,LEVER 2 ASS'Y	
334	850P600291	LEVER,SUB BRAKE	
335	850A900083	LEVER FRONT LOADING ASS'Y	
336	850A300030	LOADING,ARM T ASS'Y	
337	850A300029	LOADING,ARM S ASS'Y	
338	850A600107	T-S BRAKE ASS'Y	
339	850P800165	SPRING,TS BRAKE	
340	850A200027	CLUTCH ASS'Y	
341	850A200026	IDLER ASS'Y	
342	850P600300	MAIN BRAKE LEVER 1	
343	850P600290	ACTUATOR,SUB BRAKE	
344	850A600113	CLUTCH ACTUATOR ASS'Y	
345	850P600303	LEVER,TENSION	
346	850P600312	POST,P4	
347	850P600299	SLIDE,MAIN BRAKE	
348	850P800169	SPRING,M-B SLIDE	
349	850A600109	M-B 2 LEVER ASS'Y	
350	850A600108	T-A SLIDE ASS'Y	
351	850P600301	LEVER,LIMITER POST	
352	850P600302	LEVER,CLUTCH ACTUATOR	
353	850P300112	SLIDE,LOADING 2	
354	850P600324	CAM 2	
355	850A600099	M-B 3 LEVER ASS'Y	
356	850P300114	GEAR,LOADING S	
357	850P300115	GEAR,LOADING T	
358	850P800147	SPRING,LOADING GEAR	
359	850P800167	SPRING,AZIMUTH	
360	8144J30604	CONEHEAD SCREW M3*6 CH	
361	8146230A14	JOINT SCREW BIND M3*11 CH	
362	850P500010	ADJUST NUT	
363	850P800170	SPRING,FRONT LOADING LEVER	
364	850P600313	PULLEY,LOADING MOTOR	
365	850P600277	BELT,REEL	
366	850P800146	SPRING,P4	
367	850P600273	SLEEVE,P1	
368	850PAA0080	SHIELD,CASE	
369	850P000262	BRACKET,WORM 3	
370	789JRA0001	BELT,FRONT LOADING	
371	850AAA0051	LID,AMP SHIELD 6 ASS'Y	
372	8147130804	TAP TITE(S) PAN W6 3*8 CH	
373	850P000285	CS RING 2.6*5.4*T0.1	
401	850P900457	LINK GEAR L	
402	850P800175	SPRING,LINK GEAR L	
403	850P900358	GEAR,SYNCHRO	
404	850P900360	LEVER,FLAP	
405	850P800157	SPRING,FLAP FRONT LOADING	
406	850A900096	TOP BRACKET ASS'Y	
407	850P900458	LOCKER	
408	850P800154	SPRING,LOCKER	
409	850P900349	CASS.SIDE L	
410	850P900354	SPRING,PACK	
411	850P900444	CASS.SIDE R A	
412	850P900365	REMOVING	

REF.NO	PART NO	DESCRIPTION	
413	850P800155	SPRING,REMOVING	
414	850P900351	CASS.HOLDER	
415	850P900267	SHAFT,SYNCHRO	
416	850P900455	TAPE GUIDE PIECE VR	
417	850P900445	BRACKET,SIDE R1A	
418	850P900361	LEVER,FRONT LOADING SW.	
419	850P800158	SPRING,FRONT LOADING SW.LEVER	
420	850A900098	SIDE BRACKET R2 ASSY	
421	850P900456	LINK GEAR R	
422	850P800153	SPRING,CLUTCH GEAR	
423	850P800176	SPRING,LINK GEAR R	
424	850P900357	GEAR,CLUTCH	
425	850P900362	LEVER,LOCK	
426	850P800159	SPRING,LOCK LEVER	
427	850P900367	WHEEL	
428	850P900364	LEVER,CLUTCH	
429	850P900363	LEVER,SLIDE	
430	850P800180	SPRING,SLIDE LEVER 2	
431	850P900366	JOINT,PULLEY	
432	850A900082	WORM ASS'Y	
433	850P900446	OPENER A	
434	850P800179	SPRING,OPENER B	
435	850P900396	COVER,SENSOR	
436	A44802A640	SIDE BRACKET R ASS'Y	
437	A44802A690	CASSETTE HOLDER ASS'Y	
501	8107126604	TAP TITE(S) PAN	2.6*6 CH
502	8102130404	PAN	M3*4 CH
503	8107226804	TAP TITE(S) BIND	2.6*8 CH
504	8107230A44	TAP TITE(S) BIND	3*14 CH
505	8107230A64	TAP TITE(S) BIND	3*16 CH
506	8107230604	TAP TITE(S) BIND	3*6 CH
507	8107230804	TAP TITE(S) BIND	3*8 CH
508	8110230804	TAP TITE(P) BIND	3*8 CH
509	83ETW25000	E-RING	2.5
510	82Q3154B3N	PW	3.1*5.4*T0.13
	82Q315403N	PW	3.1*5.4*T0.3
511	82P255504N	PW(CUT)	2.5*5.5*T0.4
512	82P316005N	PW(CUT)	3.1*6.0*T0.5
513	82A3270054	WASHER	3.1*7.0*T0.5
514	82A4080054	WASHER	4.3*8.0*T0.5
515	8300720000	NYLON NUT	M2
516	815DJ20302	SET SCREW 6 CUP POINT	M2*3 BK
517	8145J30601	SCREW +UPSET	M3*6 NI
518	83CST35050	CS RING	3.5
519	82A3070C5N	PW	3.1*7.0*T0.25
520	8117B26804	TAPPING(BO) WH6	2.6*8 CH
521	82P2660C5N	PW(CUT)	2.6*6.0*T0.25
522	83ETW30060	E-RING	3.0
523	82P306005N	PW(CUT)	3.1*6.0*T0.5
550	82Q315405N	PW	3.1*5.4*T0.5
551	86817CGA04	TAPPING(BO) BIND WH6.5	2.6*10 CH
C1501	CH4FF03H4Z	CC	22000 PF 25V
C1502	CH4FF03H4Z	CC	22000 PF 25V
CD2004	06812F003A	CORD EIS CONNECTOR	812F003A
CD5001	068126029A	CORD EIS CONNECTOR	8126029A
CD5003	068122007A	CORD EIS CONNECTOR	8122007A
D1101	0010100300	INFRARED LED	LN59L
H5001	1523D91010	HEAD AUDIO CONTROL	HVMZA1054A
H5002	1543D02004	HEAD FULL ERASE	HVFMF0006A
L1501	02BL000005	ELECTRO MAGNET	JTM1002-01-01
M101	1596958008	MOTOR,LOADING	MXN-13FB12F
M2001	1510998007	CAPSTAN,DD UNIT	DFX-67B4VWA
PCB102	A39407A550	PCB ASS'Y	VE0337
Q1101	0000G00040	PHOTO TRANSISTOR	PT493FT
Q1102	0000G00040	PHOTO TRANSISTOR	PT493FT
Q1510	0002300140	PHOTO COUPLER	SPI-315-04
R1501	R001T6181J	RC	180 OHM 1/6W
R1502	R001T6271J	RC	270 OHM 1/6W
R1504	R002T2101J	RC	100 OHM 1/2W
SW101	0500211001	PUSH SWITCH	SPPB61023A
SW102	0520244002	SWITCH,ROTARY	SRZZ00081A
SW103	0501211001	PUSH SWITCH	SPPB51096A
UN4001	A39402A500S	UNIT,CYLINDER	A39402A500S
UN4002	A44804A620S	UPPER DRUM ASS'Y	A44804A620S

MECHANICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
101	A39408A720	CABINET,FRONT ASS'Y
102	713KPB0030	DOOR
103	711KPD0024	PANEL,DECK
104	715KPA0006	PLATE,REMOCON
105	735KPA0085	BUTTON,REC
106	735KPA0087	BUTTON,POWER
107	735KPD0018	BUTTON,PLAY/STOP
108	753KSA0050	PLATE,EARTH(F)
109	761KPA0034	HOLDER,PCB(L)
110	761KPA0029	HOLDER,PCB(R)
111	761KPA0028	HOLDER,SPEAKER
112	702KPA0424	CABINET,BACK
		SHEET,RATING
113	741KUA0029	SPRING,EARTH
114	751JNA0007	PLATE,EARTH WIRE
115	A44802A650	FRONT LOADING UNIT(FL-6)
116	800JR00026	SHEET,CRT SUPPORT
117	702JSA0036	CABINET,TOP
118	761KPA0030	HOLDER,VCR(L)
119	761KPA0031	HOLDER,VCR(R)
120	789JRA0001	BELT,FRONT LOADING
121	7230003569	FLAP
122	753WSA0007	PLATE,TRANS EARTH
123	753WSA0008	PLATE,EARTH
124	702JPA0378	CABINET,INSIDE
125	702JSA0033	CABINET,BOTTOM
126	8900P3035W	NYLON RIVET
127	752JSA0295	SHIELD TOP(A)
128	735WPA0005	BUTTON,POWER
201	8110630A24	TAP TITE(P) BRAZIER 3*12 CH
202	8110630804	TAP TITE(P) BRAZIER 3*8 CH
203	8117540A24	TAPPING(BO) TRUSS 4*12 CH
204	8117540A64	TAPPING(BO) TRUSS 4*16 CH
205	8141150D04	TAP TITE(P) GW22 5*40 CH
206	8117D30A04	TAPPING(BO) WH8 BRAZIER 3*10 CH
207	8102240804	BIND M4*8 CH
208	8107230604	TAP TITE(S) BIND 3*6 CH
209	8107230804	TAP TITE(S) BIND 3*8 CH
210	8117140A24	TAPPING(BO) PAN 4*12 CH
211	8107230404	TAP TITE(S) BIND 3*4 CH
212	8117330A24	TAPPING(BO) FLAT 3*12 CH
213	8102230501	BIND M3*5 NI
214	82A60B2164	WASHER 6.3*22*T1.6
215	8117540A04	TAPPING(BO) TRUSS 4*10 CH
---	J3940801A	INSTRUCTION BOOK
---	J3940807A	QUICK SET-UP SHEET
---	J3940828A	WARNING SHEET
---	J4302520B	DEW CAUTION SHEET
---	J4511102A	GUARANTEE CARD
---	791JHA0015	SHEET,LIGHTRON
---	792JHA0202	PACKAGE,TOP
---	792JHA0203	PACKAGE,BOTTOM
---	793JCD2087	GIFT BOX
---	795JCA0144	PAD